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CATALOG 1976-77

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ACCREDITATION

Broome Community College is a member of the Middle States Association of Colleges and Secondary Schools.

The College is supervised by the State University of New York, and its curriculums are registered by the State Education Department.

The Civil, Chemical, Electrical and Mechanical Technology programs are ECPD-accredited engineering technology curriculums. ECPD is the Engineers Council for Professional Development, a national organization of engineering societies.

The Dental Hygiene program is accredited by the Council on Dental Education of the American Dental Association, and the Nursing curriculum is accredited by the National League of Nursing.

The Council on Medical Education of the American Medical Association (AMA) has accredited three other curriculums—Radiologic Technology, Medical Record Technology and Medical Office Assistant, which is also accredited by the American Association of Medical Assistants. The Medical Record Technology program has double accreditation, too, having been approved by the American Medical Record Association as well as by AMA.

The College reserves the right at any time to make changes deemed advisable or necessary.

For information about the college, its programs and its admissions procedure, contact

Office of Admissions
Broome Community College
Binghamton, New York 13902
Phone 772-5001
area code 607

1976-77 CATALOG
OF
BROOME COMMUNITY COLLEGE

Binghamton, N. Y. 13902

A Comprehensive Community College
Supervised by the State University of New York
and
Sponsored by the County of Broome

THE 22 DEGREE-GRANTING CURRICULUMS of the COLLEGE

OCCUPATIONAL PROGRAMS

The following curriculums are designed to prepare graduates for immediate employment:

BUSINESS

- Accounting
- Marketing
  - Management
  - Sales
- Executive Secretarial
- Engineering Secretarial

ENGINEERING TECHNOLOGY

- Chemical Technology
- Civil Technology
- Electrical Technology
- Industrial Technology
- Mechanical Technology
- Fire Science Technology

HEALTH SCIENCES

- Dental Hygiene
- Medical Laboratory Technology
- Medical Office Assistant
- Medical Record Technology
- Nursing
- Radiologic Technology

LIBERAL ARTS AND SCIENCES

- Criminal Justice
- Child Care

UNIVERSITY-PARALLEL PROGRAMS

These curriculums are designed to prepare graduates for transfer to four-year colleges and universities in the third, or junior, year:

- Business Administration
- Engineering Science
- Liberal Arts and Sciences

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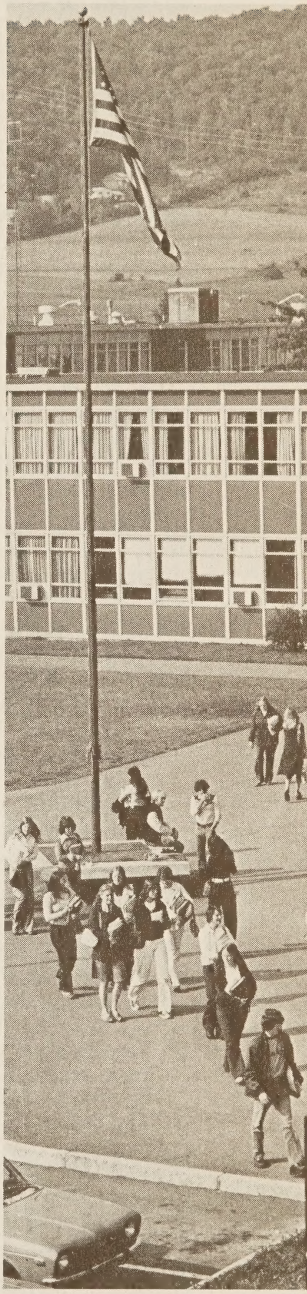


LONG RANGE GOALS

Broome Community College is committed to a broad view of education defined simply as the preparation of people to live in today's complex world.

It is an accepted fact that benefits from our College programs flow to many persons, directly and indirectly. Benefits take many forms. Some are individual and accrue to the direct recipients of community college education. Among the advantages are a higher income, a more satisfying job, greater effectiveness as a consumer, greater ability in allocating time as well as money, direct enjoyment of the educational process and its related activities, and lifetime enhancement of cultural and other experiences.

Some benefits are social and accrue to non-recipients as well as direct recipients of community college programs. Among the gains are greater economic growth based on the general advancement of knowledge and elevation of skills and on the higher proportion of the population in the labor force and the enhanced mobility of members of the labor force.

Other gains include greater political effectiveness of a democratic society based on the more adequate knowledge and more active participation of citizens; greater social effectiveness of society through the resultant better understanding and mutual tolerance among individuals and groups; the more effective preservation and extension of our cultural heritage; the greater ability of individuals and groups to accept and adjust to rapid change; and the greater potential contribution of educated parents to the welfare of their children.

Broome Community College strives to create a stimulating environment and to shape the College to meet the needs of those it serves. Our College in a democratic way will assist in promoting educational experiences for the student that will lead to the fulfillment of his personal goals; developing within the student a sense of responsibility to himself and to others; and serving the community by offering flexible curriculums and a variety of resources and activities to meet its needs.

OBJECTIVES

1. In providing equal educational opportunities in response to community needs and interests:
   a. Students will identify their academic and vocational strengths and/or interests.
   b. Students enrolled in career-oriented curriculums will demonstrate competencies required for para-professional, vocational or technical employment.
   c. Students enrolled in transfer curriculums will plan and execute their programs in order to achieve acceptance and success at a baccalaureate degree-granting institution.
   d. Students who are disadvantaged in the areas of reading, writing, mathematics and/or study skills may take developmental courses.
   e. Students interested in continuing education will avail themselves of courses for self-improvement, leisure enrichments and lifelong use.
2. The students will participate in a democratic society by supplementing their basic academic commitments and testing their ideas and ideals through active involvement in curricular, extracurricular and community affairs.
3. The community will utilize the College as a cultural, social and educational resource.
4. Members of the faculty and professional staff will assist students in pursuing academic, vocational and personal goals.

These objectives will be achieved through a regular schedule of day and evening classes, a counseling program and other College resources. Students and faculty will engage in a continuous evaluation of students' abilities, accomplishments and interests.

DEGREE PROGRAMS

Graduates of Broome Community College receive associate degrees, and the courses of study fall into four general categories—technical, business, liberal arts and health sciences. Liberal arts courses are included in all curriculums, as it is believed that students need more than technical competence to understand people and their daily working and personal inter-relationships.

Applicants to the College should consider carefully the type of program they wish to pursue, for the nature of the offerings makes it difficult for a student to switch from one curriculum to another after commencing his studies.

TECHNICAL PROGRAMS

In the area of technical education, the College offers five programs. One, Engineering Science, is in effect the first two years of an engineering curriculum, and students who do satisfactory work in it should experience little difficulty in transferring to engineering colleges at the third-year level.

The other four are designed to train engineering technicians in the fields of Chemical Technology, Civil Technology, Electrical Technology and Mechanical Technology. Graduates of these programs are prepared for immediate employment in various types of technical work upon leaving the college.

BUSINESS

The Business curriculum is designed primarily to prepare graduates for immediate employment in one of five fields—Engineering Secretarial, Executive Secretarial, Accounting, Marketing Management and Sales. In addition, there is a sixth option, Business Administration. It combines more university-parallel preparation with a minimum of job-oriented courses for the person who plans to continue his college education for a baccalaureate degree, even though he/she may want to work for a while before transferring to a four-year college.

LIBERAL ARTS AND SCIENCES

This curriculum is a university-parallel course, designed especially for the student who wishes to transfer to a four-year college or university after graduation. A sound liberal arts education is basic to many of the professions, such as medicine, law or teaching, and applicants who have such a goal would be well advised to make this selection. It is also considered excellent preparation for further schooling in business administration.

HEALTH SCIENCES

Opportunities for men and women interested in the health sciences field are provided in six areas—Dental Hygiene, Medical Office Assistant, Medical Record Technology, Nursing, Medical Laboratory Technology and Radiologic Technology. Graduates are prepared to work immediately after graduation in physicians' or dentists' offices, laboratories or hospitals.

Graduates of these programs are also qualified to take whatever licensing examinations their professions require.

ADMISSIONS

Application Procedure

An application for admission to the full-time day program must be made on official forms issued on request by the Admissions Office. Broome Community College does not participate in the State University common application program. Students usually are admitted for the fall semester; however, mid-year admissions may be possible. The freshman class is selected by "rolling" admissions, which means that students are admitted as they apply, complete the admissions process, and are found suitably qualified for a particular curriculum.

A non-refundable application fee of $10 must accompany each application. Once a student is accepted, he/she will be billed for an advance payment of $50 which will be applied toward tuition. This is also non-refundable.

The Committee on Admissions may require an applicant to participate in an admissions counseling interview. Counseling interviews are not required of all who apply, but they may be requested by the applicant.

Readmission or Transfer

Transfer credit from students who have been enrolled in other accredited colleges is subject to the approval of the chairman of the student's masjor department and the director of records. Grades earned at the college from which the student is transferring will not be entered into his cumulative grade-point average at Broome Community College. Students who have attended one or more other colleges must in all cases submit to the College Admissions Office an official transcript of work taken before formal acceptance will be granted.

Students transferring courses from other colleges will be required to complete in credit hours the equivalent of a semester's course of study for graduation. The determination of this minimum will be the responsibility of the department/division faculty sponsoring the curriculum, but in no case will the requirement be less than 12 semester credits.

Credit by Examination

Advanced Placement Examinations and College Proficiency Exams:

Applicants who have completed any of the Advanced Placement or "Subject" Examinations sponsored by the College Entrance Examination Board or the College Proficiency Examinations sponsored by the University of the State of New York, may apply for credit and advanced placement. Such requests will be handled in the same manner as transfer credit and will be granted where applicable, subject to the approval of the department chairman and director of records.

An examination for course credit may sometimes be given at the College, if a student makes such a request and can show evidence of ability or experience to indicate the likelihood that he will pass it. The examination must be taken before classes start in the particular course in which the student is seeking exemption.

The credit-by-exam concept is essentially the awarding of credit for theoretical knowledge gained outside the traditional classroom situation. The guidelines for this procedure are available from any of the College's department chairmen. A fee of $20 is charged for each examination.

Academic Preparation for Admissions

Curriculum	**REQUIRED** High School Students	Other Desirable High School Subjects
†Dental Hygiene	*2 units Mathematics Biology, Chemistry	Social Studies Typewriting
†Medical Laboratory Technology	*2 units Mathematics Biology, Chemistry	Additional Mathematics and Science courses
†Medical Office Assistant	*1 unit Mathematics 1 unit Basic Typing Biology, Chemistry	Typing, Additional Mathematics and Science courses
†Medical Record Technology	*1 unit Mathematics 1 unit Basic Typing Biology, Chemistry	Typing, Additional Mathematics and Science courses
†Nursing	Mathematics including Intermediate Algebra Biology, Chemistry	College preparatory courses
†Radiologic Technology	*2 units Mathematics 1 unit Laboratory Science 1 unit Physics	Typing, Additional Mathematics and Science courses

Curriculum	**RECOMMENDED** High School Subjects	Other Desirable High School Subjects
Business Accounting Marketing Bus. Admin. Secretarial	*2 units Mathematics 2 units Science	College preparatory courses and Typewriting
Chemical Technology	Chemistry *3 units Mathematics including Trigonometry	Additional Mathematics and Science courses Physics
Civil Technology	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Electrical Technology	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Engineering Science	Chemistry, Physics *3½ units Mathematics incl. Advanced Algebra	Additional Mathematics, Science and Technical courses
Liberal Arts and Sciences	*2 units Mathematics *4 units in any combination of science, language, or additional mathematics	College preparatory courses
Mechanical Technology	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses

† In these programs, Broome Community College gives priority for admissions to Broome County residents who will either graduate from high school or are veterans returning from active duty this academic year.

* Academic units of Mathematics such as Algebra, Geometry or Trigonometry.

NOTE—

Students interested in a degree in a health science curriculum who enter the College in another program are cautioned that there is no guarantee that a petition to transfer will be approved. They should discuss the possibilities with the dean of the Health Sciences Division.

EXPENSES

Tuition and fees are payable at the Finance Office prior to each semester's registration according to a payment schedule released by the College. The tuition, figures and fees listed on this and the next page may be changed prior to the opening of the college year August 30, 1976.

Tuition

STUDENTS CARRYING 12 OR MORE CREDIT HOURS—considered full-time students.

For New York State residents	
With residency certificate	$325 per semester
Without residency certificate	$650 per semester
For out-of-state residents	$650 per semester

After acceptance by the College, the student will be billed for an advance payment of $50. This will be applied toward the tuition payment for the first semester but it will not be refunded should the student withdraw either before or after registration.

The responsibility for payment of tuition rests upon the student, who will be billed prior to the start of each semester. Students will not be allowed to register or will be dismissed if the established due dates for payment are not met.

STUDENTS CARRYING LESS THAN 12 CREDIT HOURS—considered part-time students.

For New York State residents	
With residency certificate	$25 per credit hour
Without residency certificate	$50 per credit hour
For out-of-state residents	$50 per credit hour

Residency Certificate

To qualify for the resident tuition fee, a student is required by law to present once each academic year on or before registration a residency certificate indicating that he or she has been a legal resident of the State of New York for one year and of a county for six months.

Broome County Residents—Full-time students admitted to the College will be mailed a copy of the application for residency certificate prior to registration. This application must be completed and presented at time of tuition payment.

Out-of-County Residents—Full-time students admitted to the College will be mailed a copy of the application for residency certificate prior to registration. The application must be completed, notarized and presented to the **County Treasurer of the county in which the student resides.** The County Treasurer will then issue a residency certificate to the student. This residency certificate must be presented at the time of tuition payment.

Part-time students must meet the same requirements as stated above. The application for residency certificate form is available at the Finance Office and the Office of Continuing Education.

The completed residency forms are required once each academic year.

Failure to comply with this requirement will result in paying double tuition, not to exceed the limitations cited above.

SEE PAGE 10 FOR FINANCIAL AID

Fees

STUDENT ACTIVITY .... $50 per year

The activity fee entitles full-time day students to admission to varsity games, dances and parties, as well as a subscription to the student newspaper and the opportunity to participate in a varied program of co-curricular activities, including intramural athletics. Students will be billed $25 at the start of each semester. Students attending evening classes only are not required to pay any student activity fee.

ACCIDENT INSURANCE & HEALTH FEE .... $14.50 per year

Mandatory fee for all full-time day students. Fee lowers the premium for both the insurance policy as well as the health fee. The accident policy covers the student for 12 months commencing September 1, 1976 for expenses incurred as a result of any accident, on or off campus. Maximum coverage is $1000 per accident. Payment is made regardless of any other insurance the student may have. Bills incurred must be submitted with a claim obtained in the Health Service. Money collected from the health fee is utilized to provide physicians' services, drugs and medical supplies maintained in the Health Service for student use.

GRADUATION $10

Paid during the semester preceding graduation.

ALUMNI LIFETIME MEMBERSHIP $20

Membership in the Broome Community College Alumni Association is optional. The lifetime dues are payable during the semester preceding graduation, and they entitle graduates to complete association benefits.

CHEMISTRY LABORATORY .... $5 per semester

for all students taking chemistry laboratory courses with 200 numbers.

APPLICATION FEE	$10
READMISSION/TRANSFER FEE	10
CREDIT BY EXAMINATION	20
LATE REGISTRATION FEE	10
LATE PAYMENT	10
RETURNED CHECK FEE	5
TRANSCRIPT FEE	1

(No charge for first two transcripts)

For Part-time Evening students

DIPLOMA FEE	$7.50
CERTIFICATE FEE	$7.50

MEDICAL INSURANCE

A medical plan is available to all full-time students on an optional basis. Information on this coverage will be made available to all students by the local insurance carrier. Claims are made directly to the local insurance carrier.

TUITION REFUND POLICY

Students who withdraw from classes during the first three weeks of a semester will be entitled to tuition refunds on the following basis—100% refund during the first week, 50% during the second week and 25% during the third week. After three weeks of classes there will be no refunds. The first week of classes is considered to have ended the Saturday following the first day of classes.

FEE REFUND POLICY

The student activity fee is the only fee refunded and follows the same policy as tuition. See paragraph above.

REFUND PROCEDURE

An application for refund of tuition and student activity fee must be made in writing, on the College form provided. The date on which the application is filed is considered the official date of the student's withdrawal and any refund to which students may be entitled is computed using that date.

Living Accommodations

The College has no dormitory facility and assumes no responsibility for student housing. As a service to students, the director of the Student Activities' Office maintains an up-to-date record of housing accomodations which landlords submit as being available. This listing is neither an approval nor rating by the College, nor will the College become a third party in any arbitration between students and landlords. Housing arrangements must be made directly by students and parents with local landlords.

Room and Board

The cost of room and board for out-of-town students is dependent upon the demands of the student. The average cost varies from $40 to $50 per week.

Books, Supplies, Uniforms

Students provide at their own expense the necessary books and instructional materials. These may be purchased at the College Bookstore maintained by the Faculty-Student Association for the convenience of the students. The cost varies, depending on the curriculum, from about $170 to $300 per year.

In the Health Science curriculums students will provide, at their own expense, their own transportation to off-campus locations for necessary clinical and other experience.

In addition, some curriculums require uniforms. Among these are Nursing, Radiologic Technology, Medical Laboratory Technology and Medical Office Assistant. Gym clothes are necessary for physical education classes. Dental instruments and uniforms for Dental Hygiene students cost approximately $225.

STUDENT FINANCIAL AID

Considerable financial aid is available to students of Broome Community College, and the College maintains a Financial Aid Office to help students in this area. Financial aid is based primarily on the student's need for assistance; no student will be denied assistance because of race, creed, color or sex.

Financial aid at BCC falls into three broad categories—grants, loans and part-time work. Scholarships and grants do not have to be repaid; the loans must be paid back but the interest rates are low; part-time work is arranged through the College and coordinated with the student's academic schedule.

Among the financial aid sources for students at the College are:

Federal—Basic Educational Opportunity Grants (BEOG), Supplemental Educational Opportunity Grants (SEOG), Nursing grants and loans. Veterans benefits, National Direct Student Loans (NDSL), College Work-Study Program.

New York State—Scholar Incentive Awards, Tuition Assistance Program (TAP), Regents Scholarships, student loans of the New York State Higher Education Services Corp. (NYSHESC).

Local—Broome Community College Foundation which makes available grants and short-term emergency loans to BCC students. The funds are contributed by industries, organizations and individuals in the community.

The College has a Financial Aid Brochure with detailed information about the above programs. It is available in the Student Financial Aid Office in the Darwin Wales Administration Building. To apply for financial aid, contact the College Student Financial Aid Office.

ACADEMIC STANDARDS AND REGULATIONS

Requirements for Graduation

COMMON REQUIREMENTS FOR ALL THREE DEGREES GRANTED BY THE COLLEGE:

1. A 2.00 cumulative GRADE POINT AVERAGE in those courses applicable to the degree.
2. Recommendation of the faculty for the awarding of the degree.
3. Satisfaction of all obligations to the College.
4. The minimum number of credits for graduation as determined by each academic department. It may not be less than 60, the state minimum.

THE ASSOCIATE IN APPLIED SCIENCE DEGREE (AAS)

This degree is awarded to graduates of these curriculums:

Accounting
Chemical Technology
Child Care
Civil Technology
Criminal Justice
Dental Hygiene
Electrical Technology
Engineering Secretarial
Executive Secretarial
Industrial Technology
Marketing Management
Mechanical Technology
Medical Laboratory Technology*
Medical Office Assistant
Medical Record Technology
Nursing
Radiologic Technology*

5. Curriculum requirements:
   a. The minimum number of credits in a student's major field as determined by each academic department. These are courses intrinsic to and required by the various curriculums.
   b. A minimum of 20 credits in Liberal Arts and Sciences courses will include:
      1) Social Sciences: a minimum of 6 credits
      2) Natural and Physical Sciences (including mathematics): a minimum of 6 credits
      3) Humanities: a minimum of 6 credits in English (may include a maximum of 3 hours in speech).
   c. Satisfactory completion of all courses in a curriculum or as approved in a department.
   *d. Summer clinical experience required for graduation in curriculums noted.

THE ASSOCIATE IN SCIENCE DEGREE (AS)

This degree is awarded to graduates of the Business Administration and Engineering Science curriculums and the Science Option in Liberal Arts and Sciences.

5. Curriculum requirements:
   a. At least 30 credits in the humanities, natural sciences, mathematics, the social sciences.
   b. Physical Education—2 credits (for Liberal Arts and Engineering Science students only).

THE ASSOCIATE IN ARTS DEGREE (AA)

This degree is awarded to graduates in the Liberal Arts and Sciences curriculum.

5. Liberal Arts and Sciences requirements distributed as follows:
   a. English: a minimum of 12 credits, of which 6 shall be in composition and 6 in literature.
   b. History: a minimum of 6 credits in approved courses.
   c. Humanities: a minimum of 6 credits (6 in philosophy or 6 in a foreign language).
   d. Mathematics: Students who have completed fewer than 3 units of secondary school mathematics (through 11th year math) are required to take 2 semesters of college level mathematics . . . Students who have completed 3 units of secondary school mathematics (through 11th year math) are required to take one semester of college level mathematics . . . Students who have completed more than 3 units of secondary school mathematics (including 11th year math) are not required to take additional mathematics. They may, however, elect an appropriate math course or an elective in another field.
   e. Natural and Physical Sciences: a minimum of 8 credits.
   f. Social Sciences: a minimum of 6 credits.
   g. Electives: 16 credits minimum. A maximum of 12 credits may be taken outside the offerings in Liberal Arts and Sciences with the approval of the dean of the division.
   h. Physical Education: 2 credits. Exceptions to this requirement may be made by the dean of Liberal Arts for valid reasons.
   i. Satisfactory completion of all courses in a curriculum or as approved in a department.

Grading Philosophy

Education is intended to be a refined and efficient process of learning. Although each individual learns to some degree from his life experience, the planning, organization and guidance provided within a course of study emphasize: (1) the important phases of learning; (2) the integration of knowledge into a meaningful whole; and (3) the acquisition of knowledge and skills.

Broome Community College's grading practices focus on *success* and *achievement*.

Grades

Grade	Honor Points Per Credit Hour	Explanation
A	4	Outstanding Achievement
B	3	Significant Achievement
C	2	Satisfactory Achievement
D	1	Minimal Satisfactory Achievement
AU	—	Audit
NC	—	No Credit
I	—	Incomplete Work

Mid-Term Grades

Only "NC" grades will be reported to the student and his adviser at mid-term.

Incomplete Grades "I"

When a student receives an I grade, he/she shall within two weeks after the beginning of the next regular semester contact his/her instructor and make arrangements which shall include a time limit (not to exceed one year) in which the work will be completed. The instructor will notify the registrar of the arrangements and when the student has completed the work notify the registrar of the grade to be assigned. If the student does not meet the time limit, the instructor shall notify the registrar to record an NC grade.

If the student does not contact the instructor in the two-week period at the beginning of the semester, the registrar shall automatically record an NC grade.

Audit

Students are encouraged to use the option of taking courses on an audit basis. Any student who completes a course by auditing will receive the grade AU on his/her record in place of credit grades. He/she may not receive credit for it later unless he/she re-registers in the course or challenges it according to the existing rules for credit-by-examination.

Students who register in a course for audit are expected to have the necessary prerequisites. In this respect students are encouraged to make full use of the College's counseling services, but the ultimate decision whether or not to enroll for audit shall be the student's responsibility. Consideration may be given to a student's request for transfer from credit to audit status or vice-versa. The end of the third week of classes is the deadline for such transfer.

Full-time students may audit courses with no additional charge, but they need approval of their department chairmen. For part-time students, the regular tuition schedule applies ($25 per credit hour for New York State residents and $50 per credit hour for out-of-state students). New York State residents who are 60 years of age or older may audit courses without charge.

Conversion to Semester Format

Since its inception, Broome Community College has operated on a quarter system. Beginning with the 1974-75 academic year, the College changed to a semester format. Students who have already accumulated quarter credits can make the appropriate conversions in the following manner:

Semester Credits = Quarter Credits X 2/3

Thus, the student who has accumulated 48 quarter credits can convert these to semester credits by multiplying 48 by 2/3 (32 semester hours).

> As a General College policy, the following statement will apply:
> Broome Community College will maintain a posture as flexible as required to assure that students will not be adversely affected as a result of curricular changes in the transition from the quarter to the semester system. While it is virtually impossible to anticipate every contingency, each problem case will be reviewed and appropriate adjustments made to assure that no student will be penalized as a result of the conversion.

Developmental Studies

Broome Community College recognizes and accepts its responsibility in dealing with students who may not possess the skills necessary to function at their maximum potential. Consequently, the College has committed its resources to offering a series of courses designed to assist students in their collegiate programs.

Developmental Studies courses are available in these areas: Individualized Reading and Study Development (RDG 100, 150, 200); Basic Language Skills (ENG 100); English as a Second Language (ENG 205); Core and Career Mathematics (MAT 101); Preparatory Chemistry (CHM 102); Preparatory Physics (PHY 100, 101); Human Development Potential (SAC 101). Course descriptions can be found in the appropriate departmental sections of this catalog.

Independent Study

Many academic departments of the College offer "Independent Study" courses which are arranged between an individual faculty member and a motivated student. The student has the responsibility to make appropriate arrangements with a faculty mentor and to secure the permission of the department chairman and the division dean before registering for independent study.

Independent Study courses are *not* intended to replace regular courses which the student was unable to schedule or which he did not complete. Rather, these courses provide an opportunity for the serious student who desires to expand his academic background beyond the scope and the depth usually found in a regular course. (See course description section for offerings.)

Instructional Support Services

A substantial part of an education will be accomplished in and through classroom experiences. However, an increasing amount of education will come about through personal interaction with learning materials—either books, films, slides, tapes or combinations of these.

At Broome Community College all of these modes of instructional support are under one central direction. Consequently, the card catalog in the library contains visual and aural materials listed under the same headings as books. The librarians will be happy to help students check the materials out for use in the library's learning areas or any other place the student chooses. For special projects which require the use of audio-visual production facilities, a limited amount of equipment is available.

Dismissal from a Degree Program

A student must demonstrate discernible progress toward achieving a degree in a given program. After official enrollment in eleven semester hours of course work, a student must maintain a grade of "C" or better in 25% of his/her cumulative semester hours. Otherwise, he/she will be dismissed from the program of study. A student is officially enrolled if he/she is matriculated and registered for credit in a course after the third week of classes.

In considering a student's petition for immediate re-admission after having been dismissed from a degree program, a two-fold process will be utilized. A student's petition will initially be acted upon by either a departmental or divisional committee. If additional action is requested, the petition may then be acted upon either by a divisional or administrative committee.

Academic Probation

The concept of academic probation has been abolished at Broome Community College.

Withdrawal from Courses

If a student withdraws from a course before or during the third week of classes, no record of withdrawal will appear on the transcript. However, if a student withdraws after the third week of classes, the date and an "NC" (no credit) will appear on the transcript.

Withdrawal from the College

Broome Community College has committed itself to a philosophy of providing whatever assistance is necessary to aid the student in completing his/her academic goals. Students are strongly encouraged to seek academic and personal counseling prior to any withdrawal.

Students who decide to withdraw from the College must complete the proper termination forms available in the Student Personnel Office. Failure to comply may cause the individual to lose any possible refund of fees.

Repeating Courses

A student who wishes to repeat courses already taken at Broome Community College must secure permission of the department chairman.

When a student repeats a course to improve a grade previously received, only the higher or highest grade will be used to compute the cumulative grade point average.

Attendance Regulations

Attendance in all scheduled course activities is expected as part of each student's responsibility for his/her own education. The basic policy of the College is that the student's academic achievement will determine grades and not the bare statistics of presence or absence.

Student Responsibility: Each student is responsible for any work missed regardless of the reason for any absence.

Instructor Responsibility: Each instructor is responsible for relating the significance of attendance to the course's objectives and to inform the students of this significance in the first class meeting.

Department Responsibility: Within the spirit and framework of college policy, each department may develop its own guidelines to meet its needs. Such guidelines are subject to the approval of the division dean.

Instructional Problems

Students who feel that instructional programs or teaching techniques in their classes can be improved are welcome to discuss this with their instructors. Such considerations as quality, standards and effectiveness of the course are matters that concern both the College and the student.

If the matter cannot be resolved in the discussion between the student and instructor, the student can then request a meeting with the department chairman and the instructor. Any of the parties may request that the dean of the division be informed of the discussions.

Late Registration

An applicant may not register later than one week after the beginning of each semester except by permission of the Vice-President for Academic Affairs. A late fee will be charged.

Length of Curriculum

All associate degree programs are designed to be completed in two years. The college year is divided into two semesters of 15 weeks each plus an examination week. Radiologic Technology students and Medical Laboratory Technology students have special clinical laboratory experience.

Transfer to 4-Year Colleges and Universities

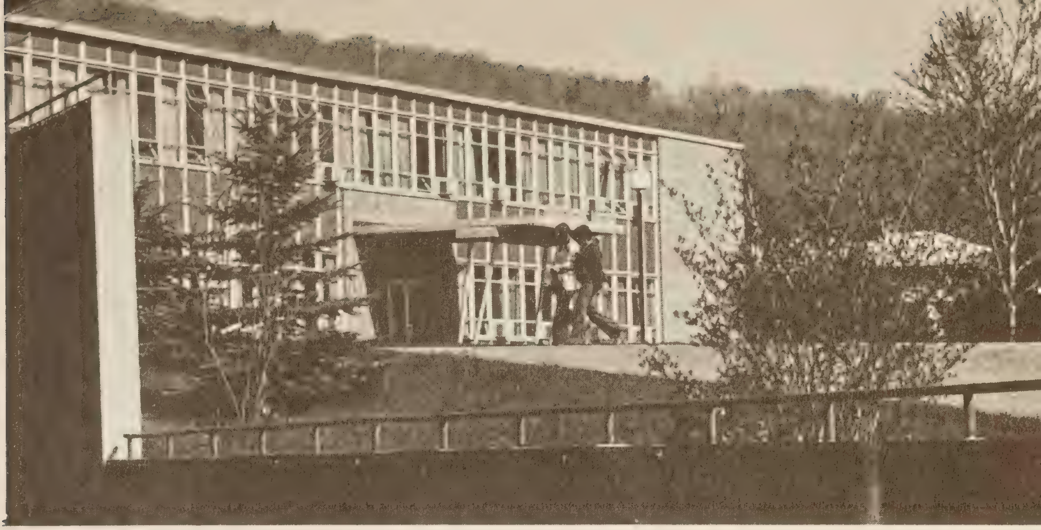
Broome Community College has developed a fine reputation for its successful preparation of students for study at senior institutions. Students desiring to continue their education are encouraged to consult with a counselor in the Counseling and Student Development Center, their faculty advisor, or department chairperson for assistance in selecting a program and/or institution that is appropriate to their goals, abilities and aspirations.

To these ends, the College conducts Transfer Emphasis Weeks. These are campus visitations by representatives of four year schools to recruit and advise potential transfer students. Taking place for two weeks usually in November and March, these visits are designed to expedite the information process necessary to insure a smooth transition between community college and various four year programs. The representatives, generally from admissions offices, discuss life on their campuses, financial assistance possibilities and activities available, in addition to the tradtional explanations of all their academic programs.

Applications for the *State University of New York* colleges and university centers are available in the Counseling and Student Development Center. Students should apply directly to all *other colleges* (non-SUNY units) by requesting an application and any other pertinent data from the admissions office of the desired college.

All students should arrange at the BCC Registrar's Office to have copies of their transcripts forwarded to the admissions offices of the colleges to which they are applying. This will insure proper transfer of applicable credits. Any requests for references or recommendations may be forwarded to the Counseling and Student Development Center. All acceptances and rejections of applications should be reported to the Counseling and Student Development Center.

Any questions or problems regarding transfer should be directed to the Counseling and Student Development Center.



ABOUT BROOME COMMUNITY COLLEGE

The College

Broome Community College is a comprehensive community college. It has programs designed to prepare graduates both for immediate employment and for transfer to four-year colleges and universities at the junior, or third-year, level.

In addition to its daytime enrollment, which numbered about 2,700 last year, the College has a continuing education program which had about 1,700 part-time evening students in the fall of 1975 and about 1,000 taking courses during the Summer Session.

The College is co-educational, publicly-supported, and has historically attracted about two-thirds of its student body from Broome County and one-third from outside the county. The ratio has recently been closer to 80% and 20%.

The day student body can be classified into four parts, based on study objectives—university-parallel or transfer programs, the business program, engineering and engineering technology curriculums, and health science courses.

The College is sponsored by Broome County, supervised by the State University of New York, and accredited by both professional and educational organizations (See inside front cover).

The Campus

The College campus is located three miles north of Binghamton on Upper Front Street, which is Route 11 and Route 12 at this point running alongside of Interstate 81. Nine of the 12 buildings form two contiguous quadrangles to make a compact campus layout.

Most of the buildings are two stories high, of modern functional design, and made of brick with colored panel-wall facing. They lie in a suburban setting in the virtual center of the College's 120 acres of land.

In addition to classrooms and laboratories, the campus has its own cafeteria, gymnasium and athletic field, and a Little Theatre. These facilities add up to make the campus a multi-million dollar investment in the youth of Broome and surrounding counties.

The Community

The community is an industrial and agricultural area in New York State's Southern Tier. It is in the approximate center of the state, measuring from east to west, and its southern extremity touches the Pennsylvania state line.

Binghamton is the principal city in Broome County, but it is only a part of the community known as the Triple Cities. Endicott and Johnson City, along with Vestal and other suburbs, help to make the community much larger in population and geography than the city of Binghamton.

Binghamton has a population of 64,123 yet the Triple Cities area embraces 155,522 people. The population of Broome County is 221,815. Diversified industry in the community includes such firms as IBM, General Electric, Singer Co. (formerly Link), GAF, New York State Electric & Gas Corp. and Endicott Johnson.

The College has become an integral part of the community since it was started in 1946. Many of the campus facilities are offered at nominal cost for use by responsible organizations, and most of the College's curriculums are designed to help fill the economic needs of the country.

History

The College graduated its first class in 1949. These students had entered what was then known as the New York State Institute of Applied Arts and Sciences at Binghamton in the fall of 1947. The original institute was one of five founded in the state in 1946, following the pattern of six agricultural and technical institutes which New York had established earlier in the century. The first programs offered were all occupational in nature and included Chemical, Electrical and Mechanical Technology, as well as Medical Office and Technical Office Assistant courses.

In 1953 New York relinquished operating control of the school to a new sponsor, the County of Broome, under provisions of the newly-enacted State Community College Law, and the name was changed to Broome County Technical Institute. In 1956 the name was again changed, to Broome Technical Community College, to reflect the increasingly comprehensive nature of the educational offerings. In 1971 the name became Broome Community College as the scope of the curriculums continued to expand.

In keeping with the comprehensive objectives of this community college, a university-parallel curriculum was instituted in Engineering Science in 1959, a two-year program of Liberal Arts and Sciences started in the fall of 1962, and a transfer program in Business Administration begun in 1963.

X-Ray Technology was added in 1965, Medical Laboratory Technology in 1966, Nursing a year later, and Medical Record Technology in 1969.

For its first five years, the school was housed in a refurbished State Guard armory in downtown Binghamton. This building was gutted by fire in September of 1951, and for the next five years Kalurah Temple and two other buildings in the city provided temporary quarters. In 1957 the college moved to its present campus on the north side of Binghamton on Route 11. The first addition to the original campus came with the construction of Titchener Hall, which was dedicated in 1966, the Library Building was completed two years later, and the Business Building opened in 1972.

LEARNING CENTER

The College is committed to the learning center concept of individualized instruction. Several curriculums have developed program units to permit students to study at their own pace and own convenience, using program material prepared by their own instructors.

Some 50 carrels using audio and visual devices comprise the Learning Center facilities on campus. The Learning Center, however, should be regarded more as a concept of learning than as a physical center or equipment. The physical facilities are only the means to the end, which is learning.

JOB PLACEMENT

Many companies send representatives to the campus each spring to interview seniors about jobs immediately after graduation.

Leading national corporations, as well as many local companies, have been among those interested in Broome CC graduates. The list includes such major area employers as International Business Machines, New York State Electric & Gas Corp., Singer Co. (formerly Link) and GAF.

Such firms as Eastman Kodak, Xerox, DuPont, Union Carbide, and Corning Glass represent the national scene.

The job interviews are specially directed toward the students in the occupationally-oriented Business program and the Electrical, Mechanical, Civil, Chemical and Medical Laboratory Technology curriculums.

In cooperation with the department chairmen, the Office of Occupational Planning and Placement coordinates permanent placement including employment listings and appointments for interviews and credential file service.

The following rundown by curriculum shows the percentages that were employed and that transferred to four-year colleges in the Class of 1975, together with the average starting salaries of those graduates who reported that information:

BUSINESS

Accounting—36.5% employed, 36.5% transferred. $6,622 average starting salary.
Business Administration—11% employed, 89% transferred. Salary information inconclusive.
General Business—86% employed, 7% transferred. Salary information inconclusive.
Marketing—53% employed, 27% transferred, $7,794 average starting salary
Secretarial—76% employed, 10% transferred. $5,727 average starting salary.

HEALTH SCIENCES

Dental Hygiene—96% employed, 4% transferred. $6,978 average starting salary.
Medical Laboratory Technology—76% employed, 5% transferred. $8,118 average starting salary.
Medical Office Assistant—59% employed, 5% transferred. $4,968 average starting salary.
Medical Record Technology—60% employed, 20% transferred. $7,596 average starting salary.
Nursing—63% employed, 18% transferred. $9,183 average starting salary.
Radiologic Technology-67% employed, 11% transferred. $6,240 average starting salary.

LIBERAL ARTS

Liberal Arts and Sciences—10% employed, 86% transferred with A.A. degree. $5,466 average starting salary. 100% transferred with A.S. degree.
Child Care—64% employed, 18% transferred. Salary information inconclusive.
Criminal Justice—100% employed before enrolling in A.S. degree program. 14% employed, 64% transferred in AA degree program. Salary information inconclusive.

SCIENCE AND ENGINEERING TECHNOLOGY

Chemical Technology—71% employed, 13% transferred. $9,964 average starting salary.
Civil Technology—44% employed, 48% transferred. $9,120 average starting salary.
Electrical Technology—37% employed, 46% transferred. $7,800 average starting salary.
Industrial Technology—79% employed before enrolling, 16% transferred. Salary information inconclusive.
Mechanical Technology—54% employed, 18% transferred. $9,307 average starting salary.

FACULTY-STUDENT ASSOCIATION

The Faculty-Student Association of Broome Community College, Inc., is an educational corporation designed to provide to the College, and particularly to the students and faculty, services that are not provided for in the regular College budget.

It provides the corporate organization through which the student fees are expended under a budget prepared by the United Student Government. It also operates the College Bookstore.

Through the modest earnings of the Bookstore the income from student fees is augmented to support new or special activities.

The association is governed by a board of directors elected by members who hold certain offices on campus.

The operating philosophy is to make the educational program outside of the classroom a well-rounded supplement to the academic experience of the student.

THE CECIL C. TYRRELL LIBRARY

The Cecil C. Tyrrell Library, named for the College's founding president, has a capacity of 900 readers and 75,000 volumes. Since 1947 the Library has developed one of the most complete collections of technical works in the Southern Tier, consisting of about 50,000 books, pamphlets, government documents and non-print media.

Extensive files of periodicals and journals and microfilms are also included in the library's holdings.

Part of the library's purpose is to stimulate intellectual curiosity, to promote independent research, and to provide leisure-time reading facilities for students and faculty.

The library is open week-night evenings during the college year and therefore is also available for evening students.

The Library is also open to the public in the "Four-County Library System" area of Broome, Chenango, Delaware and Otsego Counties, and it is participating in the "direct access" program of State University of New York (SUNY). This permits use of its facilities by students and faculty of any SUNY college, and it enables BCC students and faculty to use the libraries of all other SUNY colleges on a reciprocal basis.

ALUMNI

Alumni Association

All students of the College may become paid-up lifetime members of the Broome Community College Alumni Association, which is a non-profit corporate organization.

The association has its own officers and board of directors and its primary purpose is to provide a link between the College and its graduates. A quarterly newsletter helps to accomplish this objective by supplying alumni with periodic news of the College, as well as information about the Association and other graduates.

The Alumni Association supports the College's Scholarship program and conducts events for its members throughout the year, such as the annual Alumni Dinner-Dance. It also offers members low-cost, term life insurance.

CAMPUS CARILLON

The College has a Maas-Rowe symphonic carillon, which tolls the hours with the Westminster chimes. Periodic concerts are played either by individuals or by the automatic music roll feature. The carillon was a gift to the College, donated by former trustee Dr. Leopold Eckler and the college foundation.

STUDENT CENTER

The busiest and most versatile building on the Broome Community College campus is the Student Center. It houses the gymnasium, the College Cafeteria, Bookstore, and the Little Theatre, and many of the social events and concerts are held here. This building is used by day and evening students of all curriculums.

NON-DISCRIMINATION COMMITMENT

Broome Community College, in compliance with Title VI of the Civil Rights Act of 1964 and Title IX of the Education Amendments of 1972, does not discriminate on the basis of race, sex, religion, national origin, age, physical disability, or marital status in admissions, employment, and treatment of students and employees.

STUDENT AFFAIRS

Student affairs at Broome Community College fall within three primary areas of responsibility—student development, student services and student management.

Student Development responsibilities include counseling, foreign student affairs, academic advisement, testing, freshman orientation, student activities, intercollegiate athletics, drug abuse education, leadership training, career development, veterans advisement, personal development courses, transfer advisement.

Student Services cover admissions, financial aids, placement, health services.

Student Management concerns itself with student discipline, rights, responsibilties, judicial system and grievance procedures.

Orientation Program

Freshmen, transfer or re-admitted students will have an opportunity to participate in various advising, counseling and orientation sessions as well as social and cultural activities prior to and during the semester of acceptance into the College. Information concerning these activities will be mailed to all students prior to the beginning of the semester.

The staff of the Student Affairs Office endorses the concept that a community college environment should facilitate the development of the whole student.

Student Development Center

The Student Development Center offers a multitude of programs that are helpful to students in developing their maximum potential, and in adjusting to the new experiences they encounter during the college years. These include personal counseling, academic advising, vocational exploration and counseling, information about transfer to four-year colleges. Women's programs, personal development courses and diagnostic testing are also conducted. Group work, counseling and referrals to off-campus people and agencies is also done here.

A special brochure is available at the center, detailing what services are available to students.

Special Services Program

The Special Services Program at Broome Community College is a Federally funded program working jointly with State University of New York (SUNY) at Binghamton. Students are eligible for services by meeting an income criterion set by the U. S. Office of Education. Handicapped students are automatically eligible, regardless of income.

The program provides counseling services, tutorial help and information concerning other student needs. Tutoring sessions are held during the day at Broome Community College and also evenings and weekends at designated off-campus spots. The Special Services counselor is located in the Broome Community College Counseling Center in the Wales Administration Building and can be contacted at 772-5185.

Health Service

The college provides a Health Service which is available to all students. Professional staff includes a part-time physician available three mornings a week for two hours and one full-time registered nurse during regularly scheduled class periods.

The Health Service provides care of injuries, minor illness, health counseling and referral services to community resources. It is a resource area for relevant student problems, and it furnishes a non-threatening environment for personal problems. All records are confidential and health data is released only with the written authorization of the student. Common procedures performed by the Health Service include blood, urine tests, throat cultures, screening for V.D., pregnancy testing, breast exams, birth control counseling.

The Health Service is located on the first floor of the Wales Building, and cots are available for students to obtain a few quiet moments in a busy schedule.

An Emergency Squad composed of students assists the Health Service to bring quick, efficient assistance in time of an emergency. Students are encouraged to become active in this important function on campus.

Veteran's Affairs

The Veteran's Affairs Office provides assistance to veterans in applying for VA educational benefits and in resolving late payment problems. The veteran is offered personal and academic counseling and a referral service to organizations that can be of unique assistance to the veteran.

Foreign Students

The College welcomes and encourages qualified non-immigrant students to its campus and is authorized by the United States Department of Justice to issue necessary Certificates of Eligibility (Form I-20A).

It is absolutely necessary that all foreign students make complete financial arrangements before coming to the United States. Regulations of the United States Immigration and Naturalization Service generally prevent employment for temporary visa students, at least for the first year of study. Broome Community College has limited financial resources and consequently can admit only those students from abroad who have established their ability to cover all expenses for their course study at the College.

Students are required to demonstrate proficiency in the English language. An examination (TOFEL) may be required to determine such adequacy, and each applicant must present the equivalent of a full program of secondary education for admission. The College offers a special English course for those having difficulty.

No housing for students is available on campus. Some local residents list with the College rooms and apartments they have available for rent. Students are responsible for making their own arrangements for housing. It is estimated that college costs and living expenses will approximate $3,000 per year.

There is an advisor on campus, who will assist foreign students in as many ways as possible. His office is located on the second floor of the Wales Building, Room 210.

Student Activities

The College recognizes the fact that student experiences outside the classroom are important in one's over-all development. For this reason the College supports an active co-curricular program as a complement to classroom studies. The variety of activities on the campus reflects the diversification of student interest and provides the opportunity for students to develop talents, leadership ability and a sense of social responsibility.

Students should check carefully for crediting arrangements for co-curricular activities. Liberal Arts, for example, permits a maximum of six such credits to be used in meeting Associate in Arts and Associate in Science degree requirements.

United Student Government

The United Student Government is the official representative organization of the student body. As such, it is consulted by the trustees, administration, faculty and staff when student input is desired.

In order to obtain the broadest possible cross-section of the campus, membership is derived from the following areas:

A. The Freshmen and Senior class
B. The four educational divisions—Technologies, Health Sciences, Liberal Arts, Business.
C. The special interest groups—athletics, media, clubs, social activities.

Membership in the United Student Government is by campus-wide election or by appointment, as appropriate.

Some functions of the Student Government are:

1. Coordinaton, distribution, and supervision of funds for student activities.
2. Recommendation of policy to the College Administration via the Collegiate Assembly.
3. Management of bookstore and vending operations through the Faculty-Student Association.

The United Student Government is a member of the Community College Student Association and coordinates the activities of this college with other colleges and universities statewide.

Social Activities Program Board

The Social Activities Program Board (SAPB) is one of the least heard of organizations on campus, but the events it sponsors are popular with students. The Board is responsible for all on and off campus social events underwritten by the student activity fee. The social programs include mixers, movies, coffeehouses, concerts, Spring Weekend, and semi-formals, to mention a few.

Students are encouraged to join SAPB and assist in its operation, providing the necessary light, sound, advertising, and specialist workers for these events.

The Union

The small pre-fab building on campus is known as The Union. It houses varied facilities for students to enjoy during their leisure hours. A Union Board governs the rules and regulations under which billiard and ping-pong tables, "fooseball," air hockey and pin ball machines are made available to the students. For those who wish to relax, there is a lounge with fireplace, player piano, television and vending machines.

Also located in The Union are the offices of the yearbook, campus newspaper, Social Activities Program Board, United Student Government and the Director of Student Activities.

Student Publications

The Fulcrum is the campus newspaper and The Citadel the College yearbook. Positions on both publications are open to all students.

The Fulcrum covers controversial college issues both editorially and graphically. Published twice monthly, it is the principal voice of the student community. It is managed and edited by the students themselves. Positions on the staff are open to all students, and the office is located in The Union.

The Citadel staff is involved in the development and editing of the College yearbook which reflects the unique features of the current school year, and offers a pictorial presentation of the students, faculty and staff.

Music

College Choir is sponsored jointly by the Liberal Arts Department and United Student Government. Choristers have gained an excellent reputation and are exposed to a broad range of choral literature reflecting the varied demands for community concerts. The chorus traditionally produces its own Christmas program for local television and presents an annual Spring Concert, as well as performing for local church and civic organizations. Rehearsals are held twice weekly and all students as well as faculty and staff are welcome to sing in the ensemble.

The Instrumental Music Association offers students who have previously played instruments the chance to continue their involvement in small ensembles (brass, woodwind, string and recorder) and the College Stage Band. A limited program of private coaching is also available.

The Broome Community College Theatre Company

Complementing the studio and academic course work in theatre is the Broome Community College Theatre Company. All students are invited to participate, whether or not enrolled in formal course work.

The Theatre Company enjoys a fine artistic reputation, presenting a broad range of theatrical styles, and provides its actor/technicians with varied opportunities for ensemble as well as individual training. Whether performing in the intimate setting of the college's Little Theatre, or on the road in Europe in an international festival, the BCC Theatre Company provides a challenging and exciting experience for students with an interest in the theatre.

NOTE: Students may receive transferable credit for active participation in College Choir, the Instrumental Music Associaton and the College Theatre Company. The conditions for this credit are available from one's advisor.

Honor Societies

Phi Theta Kappa

In 1962, the Mu Eta Chapter of Phi Theta Kappa was established at the College. Phi Theta Kappa is a national honor society at junior colleges, similar in purpose to Phi Beta Kappa at the four-year colleges and universities. Mu Eta Chapter is open to freshmen and seniors at Broome CC who have achieved outstanding academic grades, been especially active in co-curricular participation, demonstrated outstanding qualities of leadership and responsibility, and made noteworthy contributions to the College.

Sigma Phi Alpha

The national dental hygiene honor society, Sigma Phi Alpha, has a chapter at Broome CC, the Upsilon Chapter. Senior Dental Hygiene students who rank highest in scholarship and charter and who exhibit potential qualities for future growth and attainment are selected for membership.

Tau Alpha Pi

The national honor society for students in engineering technology programs, Tau Alpha Pi has established a chapter on the Broome Community College campus. It is the Beta Theta Chapter. This society recognizes outstanding academic achievement in the BCC engineering technology curriculums in Electrical, Civil, Chemical and Mechanical Technology.

Professional Society Affiliates

Since exposure to organizations in their fields of study is considered of benefit to students, many curriculums have their own affiliates of national professional societies. Among these are:

Society of Manufacturing Engineers (SME) for Mechanical Technology students.

Dental Hygiene Association, an affiliate of the American Dental Hygiene Association.

Broome CC Chapter *Future Secretaries Association,* affiliated with the National Secretaries Association (International) Binghamton Chapter.

Institute of Electrical and Electronics Engineers (IEEE) for Electrical Technology students.

In addition, some meetings of local professional societies are attended by students, as the American Chemical Society invites Chemical Technology students to its meetings. Some professional societies hold meetings on campus, too, and students are always welcome to attend. Thus students have the opportunity to become acquainted with professional people in their fields of study and to attend lectures and see films and demonstrations of new developments.

Curriculum Organizations

In addition to the student organizations listed above that are affiliated with professional societies, the College has a number of associations that are identified with specific curriculums. Among these are the Business Club, The Civil Technology Association, the Medical Laboratory Technology Society, and the Student Nurses Association.

Other Clubs

In addition to the co-curricular activities already listed, other organizations are active on campus. These include the Archery Club, Art Club, Aviation Club, Camera Club, Campus Bible Fellowship, Chemistry Club, Chess Club, Circle K, Emergency Squad, Environmental Action Club, Forum, Hockey Club, Lacrosse, Literary Magazine, Lively Arts, Newman Association, Outing Club, Parachute Club, Riding Club, Ski Club. These are open to all students, and details are available in the Student Handbook and from the Director of Student Activities.

Men's Sports

Broome Community College fields men's teams in seven varsity sports and competes on a club basis in ice hockey, lacrosse, snow skiing and horse show competition.

BCC athletic teams have earned an excellent reputation in two-year college competition. Included in the basketball team's more than 600 victories are 10 regional titles.

The tennis team has also been a frequent regional winner, and the baseball team captured its third regional title in the spring of 1974 as it compiled a 61-14 won-lost record in the last three seasons. Those same years, the golf team was undefeated in 34 consecutive dual meets.

The cross country and wrestling teams have shown marked improvement and have sent competitors to recent national tournaments. And the fortunes of the soccer team appear to be on the rise as the 1975 squad participated in the sub-regional play-offs for the first time in a decade.

Intramurals

The Physical Education Department coordinates an intramural program for male students enrolled at the college. League competition is conducted in a variety of individual and team sports. Participation is encouraged in such activities as flag football, soccer, cross country, basketball, volleyball, gym hockey, horseshoes, bowling, softball, tennis and golf.

Women's Sports

With the increasing interest in women's sports, the college now fields teams in four varsity sports -- tennis, volleyball, basketball, softball. The girls too have had good success in Region III competition, copping the tennis doubles and singles titles recently and sending the volleyball team to the first-ever national junior college tournament. In addition, girls are welcome to compete on any of the club squads in which they demonstrate proficiency.

Opportunities for Part-time Study

People often think that higher education is available only for the recent high school graduate. Broome Community College tries to reach out and meet the educational needs of ALL the people in Broome County. Community is part of the College's name, and an immense portion of its mission. BCC is concerned about meeting the needs of the part-time student, as well as those enrolled full-time.

Credit courses and programs, non-credit short courses (mini-courses), workshops, seminars and conferences are provided for community residents—to sharpen job skills, explore new fields of interest, or to have fun.

BCC provides opportunities for people whose principal occupations have ceased to be those of students. The College helps them pursue learning as a means of developing their potential for resolving problems in themselves, their institutions or their communities.

Registration is the only requirement asked of the adult student planning to take courses. A high school diploma or equivalency is not needed and in fact may be obtained after taking 24 semester credit hours of study as a degree candidate in a particular program.

What are the opportunities available for Part-time Study?

DAYS—Any member of the community may register for courses offered during the day. There are no specific requirements except in some cases where advanced courses need prerequisites.

EVENINGS— In the evening there is a full array of credit courses developed primarily for the part-time student. These courses are 15 weeks in length and can be taken individually or, with proper counseling, toward a certificate or an associate degree.

In addition, Broome Communty College offers the community a series of non-credit mini-courses. Usually these are three or six weeks long, meeting one night per week. Topics range from interpersonal relations to specific occupational areas.

The College is also willing to contract with businesses, industries or agencies to develop specific educational programs to meet the needs of their employees or clients. Currently the College contracts with the Albany Office of the Civil Service Employees Association and the Local Government Institute to offer courses to New York State employees and employees of other governmental units in Broome County. These courses may be credited toward graduation.

The College, through its mini-course programs, tends to target the needs of the community by offering its professional leadership in planning, organizing and providing instruction for inter-agency relationships. Professional members of the campus staff work with a number of the local community agencies in co-sponsoring programs for specific audiences in our community.

Tuition and Fees for Part-Time Day and Evening Students

Tuition—See Page 8.

Student Activity Fees—(A) Part-time day students (those taking fewer than 12 credit hours) pay a $2 student activity fee per semester. This entitles them to admission to convocations and to issues of The Fulcrum, the student newspaper. It does not include, however, admission to varsity sports events or membership in student organizations or to copies of The Citadel, the student yearbook. The student has the option though of paying $25 per semester and receiving the same activity privileges as full-time day students.

(B) Students attending evening classes only are not required to pay any student activity fee.

BUSINESS DIVISION

The Business Division offers courses of study in six different options. These are Engineering Secretarial, Executive Secretarial, Marketing with Management Emphasis or Sales Emphasis, Accounting and Business Administration. The first five are designed to prepare graduates for immediate employment while the Business Administration Option is for students planning to continue their education at a four-year college or university.

It is possible to transfer from all programs. But because each student's transfer credits are evaluated by the four-year institution, the number of credits accepted can vary.

These programs were planned with the assistance of businessmen, accountants, administrative managers, controllers, auditors, sales managers, engineers and secretaries.

Employment in business and industry, as well as in management training programs offered by banks, chain stores and insurance companies, provides some of the best opportunities for a graduate of the Accounting and Marketing and Management Options.

CURRICULUMS

Accounting

Students in this option receive their training in such areas as intermediate accounting, cost accounting and data processing. Graduates successfully take positions in banks, industrial firms, public accounting and retail business.

Business Administration (Transfer Program)

This program is designed specifically to prepare graduates to continue their business studies at a four-year college or university. While offering maximum transfer potential toward a Bachelor's Degree in Accounting or Management, it still gives students preparation for employment if they decide to work instead of continuing their education.

Marketing—Management or Sales

This option is subdivided into two emphases—management and sales. Both programs are career-oriented, although about half of the students transfer to four-year colleges. Those who are seriously considering transferring should choose the management emphasis; those who intend to complete only two years of study should select the sales emphasis. Skill building is structured into each program, and electives are made available.

Mid-management employment generally is found in sales and other aspects of marketing services, equipment, products at the wholesale level, and managerial training programs in retail, wholesale, and industrial institutions. Considerable background pertaining to self-employment is incorporated within the subject matter.

Secretarial Sciences

ENGINEERING SECRETARY

Graduates of this option can obtain immediate employment as stenographers, secretaries or private secretaries. Students in this option study engineering terminology to understand the specialized language of the engineer. They are well prepared to work on engineering reports, records and correspondence.

EXECUTIVE SECRETARY

Graduates of this option can obtain immediate employment as stenographers, secretaries or private secretaries. Terminology studies for this program include law, education, insurance, real estate and investment. Students can understand the specialized language used in the professions as well as in government and business firms.

Business Curriculums

Accounting Option

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BUS	100	Accounting I	4	0	4
BUS	112	Business Mathematics	2	0	2
BUS	118	Business Law I	3	0	3
BUS	141	Marketing	3	0	3
ENG	110	Written Expression I	3	0	3
			15	0	15

Spring Semester

BUS	101	Accounting II	4	0	4
CST	110	Introduction to Data Processing	3	0	3
ENG	120	Written Expression II	3	0	3
MAT	105	*Career Mathematics with			
		Business Option	4	0	4
		or Liberal Arts Elective	(3)	(0)	(3)
SPK	101	Effective Speaking	2	0	2
			15-16	0	15-16

2nd YEAR

Fall Semester

BUS	200	Intermediate Accounting I	4	0	4
BUS	205	Cost Accounting I	4	0	4
		Elect 1 of the following:			
BUS	249	Principles of Personnel Management	(3)	0	(3)
CST		A programming language course	(2)	(2)	(3)
PHS	111	Physical Science for Today	2	2	3
		**Social Science Elective	3	0	3
			15-16	2-4	17

Spring Semester

BUS	201	Intermediate Accounting II	4	0	4
BUS	206	Cost Accounting II	4	0	4
		Elect 2 out of 3			
BUS	220	Financial Information Systems	(2)	(2)	(3)
BUS	295	Accounting Seminar	(2)	(2)	(3)
CST		A programming language course	(2)	(2)	(3)
		**Social Science Elective	3	0	3
			15	4	17

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*If a student has passed Mathematics 11 or intermediate algebra in high school, he/she takes a Liberal Arts elective.

**Economics recommended for students planning to transfer.

Business Administration Option

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BUS	100	Accounting I	4	0	4
BUS	112	Business Mathematics	2	0	2
BUS	118	Business Law I	3	0	3
BUS	141	Marketing	3	0	3
ENG	110	Written Expression I	3	0	3
			15	0	15

Spring Semester

			Class	Lab	Credits
BUS	101	Accounting II	4	0	4
BUS	115	*Business Statistics	3	0	3
		or			
MAT	105	*Career Mathematics with Business Option	(4)	(0)	(4)
BUS	120	Business Law II	3	0	3
CST	110	Introduction to Data Processing	3	0	3
ENG	120	Written Expression II	3	0	3
			16-17	0	16-17

2nd YEAR

Fall Semester

			Class	Lab	Credits
		Elect 1 of the following 3 courses:			
BUS	200	Intermediate Accounting I	(4)	0	(4)
BUS	249	Principles of Personnel Management	(3)	0	(3)
CST	120	Computer Programming—FORTRAN	(2)	(2)	(3)
ECO	110	Introduction to Micro-Economics	3	0	3
MAT	121	Finite Mathematics	3	0	3
PHS		113 OR 115 OR 116 Physical Science—Astronomy OR Geology OR Environment	3	3	4
		Liberal Arts Elective	3	0	3
			14-16	3-5	16-17

Spring Semester

			Class	Lab	Credits
		Elect 1 of the following 3 courses:			
BUS	201	Intermediate Accounting II	(4)	0	(4)
BUS	245	Management: A Behavioral Approach	(3)	0	(3)
BUS		Business Elective	(3)	0	(3)
ECO	111	Introduction to Macro-Economics	3	0	3
MAT	122	Introduction to Calculus	3	0	3
PHS		113 OR 115 OR 116 Physical Science—Astronomy OR Geology OR Environment	3	3	4
		Liberal Arts Elective	3	0	3
			15-16	3	16-17

*If a student has passed Mathematics 11 or intermediate algebra in high school, he/she takes Business Statistics.

Marketing Option - Management Emphasis

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BUS	100	Accounting I	4	0	4
BUS	112	Business Mathematics	2	0	2
BUS	118	Business Law I	3	0	3
BUS	141	Marketing	3	0	3
ENG	110	Written Expression I	3	0	3
			15	0	15

Spring Semester

			Class	Lab	Credits
BUS	101	Accounting II	4	0	4
BUS	120	Business Law II	3	0	3
ENG	120	Written Expression II	3	0	3
MAT	105	Career Mathematics with Business Option	4	0	4
ECO	110	Micro Economics	3	0	3
			17	0	17

2nd YEAR

Fall Semester

			Class	Lab	Credits
BUS	115	Business Statistics	3	0	3
BUS	152	Salesmanship	3	0	3
BUS	245	Management: A Behavioral Approach	3	0	3
CST	110	Introduction to Data Processing	3	0	3
SPK	101	Effective Speaking	2	0	2
		Social Science Elective	3	0	3
			17	0	17

Spring Semester

			Class	Lab	Credits
BUS	229	Advertising	4	0	4
BUS	238	Marketing Research	3	0	3
BUS	249	Principles of Personnel Management	3	0	3
PHS	111	Physical Science for Today	2	2	3
		Elect 1 of the following:			
CST	118	Computer Programming--COBOL	(2)	(2)	(3)
CST	120	Computer Programming--FORTRAN	(2)	(2)	(3)
		Business Elective	(3)	(0)	(3)
			14-15	2-4	16

Marketing Option - Sales Emphasis

1st YEAR

Fall Semester

			Hours per Week Class	Lab	Credits per Semester
BUS	100	Accounting I	4	0	4
BUS	112	Business Mathematics	2	0	2
BUS	118	Business Law I	3	0	3
BUS	141	Marketing	3	0	3
ENG	110	Written Expression I	3	0	3
			15	0	15

Spring Semester

			Hours per Week Class	Lab	Credits per Semester
BUS	120	Business Law II	3	0	3
BUS	131	Personal Finance	3	0	3
BUS	152	Salesmanship	3	0	3
BUS	249	Principles of Personnel Management	3	0	3
ENG	120	Written Expression II	3	0	3
			15	0	15

2nd YEAR

Fall Semester

			Hours per Week Class	Lab	Credits per Semester
BUS	229	Advertising	4	0	4
CST	110	Introduction to Data Processing	3	0	3
SPK	101	Effective Speaking	2	0	2
PHS	111	Physical Science for Today	2	2	3
		Social Science Elective	3	0	3
		Business Elective	3	0	3
			17	2	18

Spring Semester

			Hours per Week Class	Lab	Credits per Semester
BUS	157	Report Writing	3	0	3
BUS	242	Marketing Seminar	3	0	3
BUS	245	Management: A Behavioral Approach	3	0	3
BUS	264	Retailing	3	0	3
		Liberal Arts Elective	3	0	3
		Social Science Elective	3	0	3
			18	0	18

Secretarial student learning to operate the Executive typewriter in the department's audio-visual tutorial (AVT) area.

Secretarial Sciences

1st YEAR for curriculum options in ENGINEERING SECRETARY EXECUTIVE SECRETARY

Fall Semester

			Hours per Week Class	Lab	Credits per Semester
BUS	100	Accounting I	4	0	4
BUS	112	Business Mathematics	2	0	2
ENG	110	Written Expression I	3	0	3
SEC		*Typewriting	2	3	3
SEC	110	**Shorthand or Alternate	2-3	3-0	3
			13-14	6-3	15

Spring Semester

			Class	Lab	Credits
ENG	120	Written Expression II	3	0	3
SEC		***Typewriting	2	3	3
		or Business Elective	(3)	(0)	(3)
SEC	111	Shorthand and Transcription	2	5	4
SPK	101	Effective Speaking	2	0	2
		Science Elective	2-3	2-0	3
			11-13	10-8	15

*Test will determine which course
**Based on student's record
***SEC 102 or SEC 104 Typewriting must be completed

Engineering Secretary Option

2nd YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
MET	129	Survey of Engineering Laboratories	2	2	3
SEC	151	Business Communications	2	0	2
SEC	212	Technical Typewriting	2	2	3
SEC	230	Advanced Shorthand	2	3	3
		Social Science Elective	3	0	3
		Liberal Arts Elective	3	0	3
			14	7	17

Spring Semester

			Hours per Week		Credits per Semester
			Class	Lab	
SEC	234	Engineering Shorthand	2	3	3
SEC	240	Office Practice	0	4	2
SEC	242	Secretarial Procedures	3	1	3
		Business Elective	3	0	3
		Social Science Elective	3	0	3
		Free Elective	3	0	3
			14	8	17

Executive Secretary Option

2nd YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BUS	118	Business Law I	3	0	3
ECO	110	Introduction to Micro-Economics	3	0	3
SEC	151	Business Communications	2	0	2
SEC	210	Executive Typewriting	2	2	3
SEC	230	Advanced Shorthand	2	3	3
		Free Elective	3	0	3
			15	5	17

Spring Semester

			Hours per Week		Credits per Semester
			Class	Lab	
ECO	111	Introduction to Macro-Economics	3	0	3
SEC	232	Executive Shorthand	2	3	3
SEC	240	Office Practice	0	4	2
SEC	242	Secretarial Procedures	3	1	3
		Free Elective	3	0	3
		Liberal Arts Elective	3	0	3
			14	8	17

HEALTH SCIENCES DIVISION

DENTAL HYGIENE

The dental hygiene curriculum is designed to prepare students for the contemporary practice of dental hygiene. The curriculum emphasizes the fundamental knowledge necessary for practice in a private dental office or similar clinical setting under the supervision of a dentist.

The dental hygienist performs various preventive services, such as dental prophylaxis, topical fluoride applications, dental radiographs and instruction in plaque control procedures. Successful completion of the curriculum permits one to take the required written and practical licensure examinations.

Students who wish to pursue a career as a dental hygienist in an elementary or secondary school or as a dental hygiene educator at the college level are encouraged to transfer to a baccalaureate program after graduation.

The curriculum is accredited by the Council on Dental Education of the American Dental Association.

Dental Hygiene students making study models of their patients' mouths. They are applying dental plaster to the impressions they took of the patients.

Dental Hygiene

1st YEAR

Fall Semester

			Hours per Week		Credits per
			Class	Lab	Semester
BIO	131	Human Biology I	3	2	4
CHM	136	Chemistry	3	3	4
DEN	101	Dental Hygiene I	2	6	4
DEN	103	Oral Anatomy and Physiology	3	3	4
ENG	110	Written Expression I	3	0	3
			14	14	19

Spring Semester

BIO	132	Human Biology II	3	2	4
DEN	102	Dental Hygiene II	2	8	4
DEN	104	Nutrition	2	0	2
DEN	106	Clinical Dental Radiography	1	2	2
BIO	160	Microbiology	2	3	3
SPK	102	Effective Speaking	3	0	3
			13	15	18

2nd YEAR

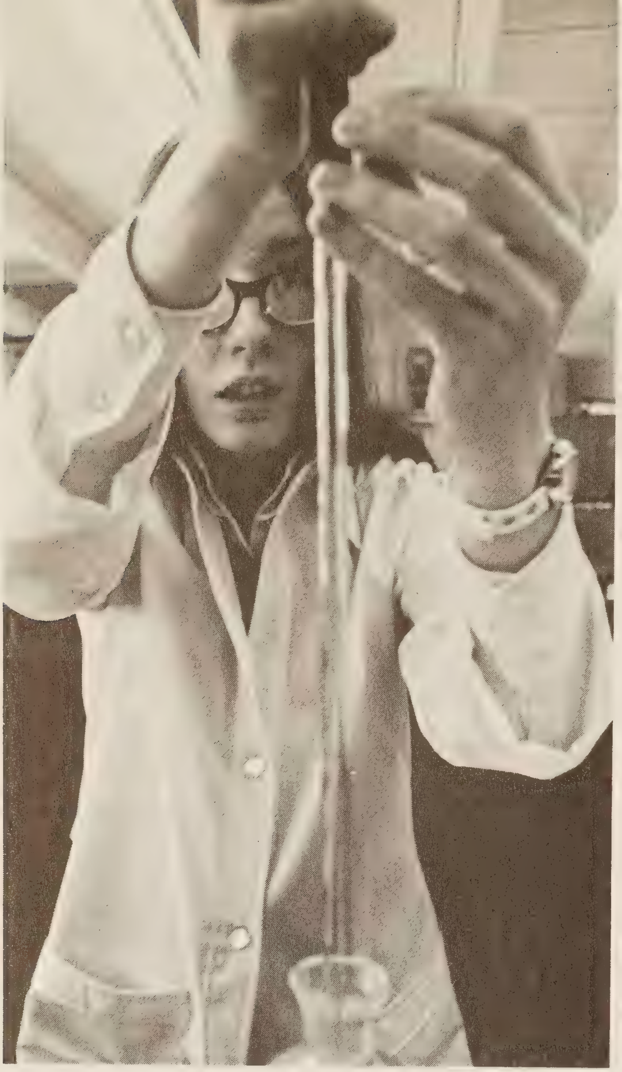
Fall Semester

DEN	201	Dental Hygiene III	4	12	7
DEN	204	General and Oral Pathology	3	0	3
DEN	208	Periodontology	2	0	2
DEN	212	Public Health	2	0	2
PSY	110	General Psychology	3	0	3
			14	12	17

Spring Semester

DEN	202	Dental Hygiene IV	2	12	5
DEN	206	Dental Pharmacology	2	0	2
DEN	210	Dental Materials	2	2	3
DEN	214	Dental Specialities	2	0	2
SOC	110	Introduction to Sociology	3	0	3
			11	14	15

NOTE - The Dental Hygiene Department recommends that dental hygiene students wear safety glasses during pre-clinical and clinical procedures, especially the individual wearing contact lenses.



Medical Laboratory Technology student performing a titration procedure in a Clinical Chemical Laboratory.

MEDICAL LABORATORY TECHNOLOGY

The demand for medical laboratory technicians continues to increase, with the majority finding employment in hospital clinical laboratories and in analytical, control and research laboratories of chemical and pharmaceutical companies. Others are employed as research assistants at large universities and still others have continued their higher education toward the baccalaureate in this field at a four-year college or university.

To provide the background necessary for work in these areas, the program includes courses in chemistry, physiology, microbiology and physics.

Extensive laboratory work in bioanalytical procedures, chemical instrumentation, microbiological and serological techniques and radiation physics helps to develop the skill needed for a wide range of job opportunities.

Work in the sciences is balanced by a program in general education including social sciences, English and mathematics.

Satisfactory completion of 12 weeks of summer clinic experience is required. While there is no salary or direct credit associated with this experience, it is a vital and integral part of the students' educational experience.

Medical Laboratory Technology

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BIO	131	Human Biology I	3	2	4
CHM	131	Chemistry	3	3	4
ENG	110	Written Expression I	3	0	3
MAT	124	Statistics	3	0	3
MLT	111	Introduction to Clinical Laboratory Methods & Practices	1	2	2
			13	7	16

Spring Semester

			Class	Lab	Credits
BIO	132	Human Biology II	3	2	4
BIO	150	Microbiology I	3	3	4
CHM	132	Chemistry	3	3	4
MLT	112	Hematology	2	4	3
ENG	120	Written Expression II			
		or	3	0	3
SPK	102	Effective Speaking			
			14	12	18

Summer Term

*Summer Clinical Laboratory of 6 weeks

2nd YEAR

Fall Semester

			Class	Lab	Credits
CHM	221	Organic Chemistry	2	3	3
MLT	211	Clinical Chemistry I	2	6	4
MLT	251	Microbiology II (Diagnostic)	3	4	4
PHY	116	Physics	2	2	3
		Social Science Elective	3	0	3
			12	15	17

Spring Semester

			Class	Lab	Credits
CHM	222	Organic Chemistry	2	3	3
CHM	224	Instrumental Analysis	2	6	4
MLT	212	Clinical Chemistry II	2	6	4
MLT	222	Clinical Physiology	2	0	2
MLT	232	Blood Banking & Serology	1	3	2
		Social Science Elective (ECO 107 Medical Economics & Law recommended)	3	0	3
			12	18	18

Summer Term

*Summer Clinical Laboratory of 6 weeks

***GRADUATION REQUIREMENT**

MEDICAL OFFICE ASSISTANT

The medical office assistant has many employment opportunities in physicians' offices and related fields. Some of these are in medical centers, nursing homes, research centers, hospital administrative offices and as a medical assistant affiliated with a school health department.

Broome Community College prepares students for this career by offering specialized training that combines medical office management in administrative and clinical areas with laboratory procedures.

In addition to basic knowledge of such skills as typing, accounting and office procedure, the assistant will have technical background in such subjects as anatomy, physiology, microbiology, pharmacology and chemistry. Courses in English, social sciences and mathematics provide a general background. Laboratory procedures of a physician's office such as urinalysis, hematology, electrocardiography and audiography complete the program of studies.

Students gain practical experience in administrative responsibilities, clinical laboratory procedures and assisting the physician in medical offices two days a week during the last semester of the senior year.

The Medical Assisting Program is accredited by the Council on Medical Education of the American Medical Association in collaboration with the American Associate of Medical Assistants. Graduates may become fully certified by taking the Certified Medical Assistants Examination.

Medical Office Assistant students taking a blood pressure reading in the Human Biology Laboratory.

Medical Office Assistant

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BIO	131	Human Biology I	3	2	4
CHM	136	Chemistry	3	2	4
ENG	110	Written Expression I	3	0	3
MOA	101	Medical Assisting Science	0	2	1
MOA	112	Standard First Aid and Personal Safety	0	2	1
MRT	105	Medical Terminology	2	0	2
SEC	102	Typewriting	2	3	3
			13	11	18

Spring Semester

			Class	Lab	Credits per Semester
BIO	132	Human Biology II	3	2	4
ENG	120	Written Expression II	3	0	3
MOA	111	Medical Assisting Procedures	2	2	3
MOA	210	Pharmacology	2	0	2
MRT	106	Terms and Transcriptions	2	4	4
			12	8	16

2ND YEAR

Fall Semester

			Class	Lab	Credits per Semester
BIO	160	Microbiology	2	3	3
MOA	206	Medical Office Management	3	3	4
MOA	211	Medical Assisting Procedures	2	4	4
		Social Science Elective	3	0	3
SPK	102	Effective Speaking	3	0	3
			13	10	17

Spring Semester

			Class	Lab	Credits per Semester
ECO	107	Medical Economics & Law	3	0	3
MAT	108	**Career Mathemetics	3	0	3
MOA	201	Medical Assisting Procedures	2	4	4
MOA	244	Directed Practice	0	16	4
			8	20	14

**MAT 108 Career Mathematics will not be required if the student has completed prior mathematics courses. An elective may be substituted.

Medical Record Technology student researching information about a patient at an area hospital. Off-campus training in a hospital record department is a requirement of the curriculum.

MEDICAL RECORD TECHNOLOGY

A medical record is the permanent report of a person's illness or injury kept to preserve information of medical, scientific and legal value. The record inlcudes all medical reports which describe how the patient's illness was diagnosed and treated. Medical records are needed to help doctors diagnose and treat future illness, to verify insurance claims, to plan hospitals, to inform the public health officials, and to aid researchers.

The medical record technician works in the medical record department of a hospital, clinic, nursing home, school of veterinary medicine or other health facility and is responsible for many aspects of preparing, analyzing and preserving health information needed by the patients, by the hospital and by the public. The duties include reviewing medical records for completeness and accuracy and also translating diseases and operations into the proper coding symbols.

Other duties include filing medical records, preparing records for microfilming, typing reports of operations, X-rays and laboratory examinations, as well as histories, physical examinations and discharge summaries, compiling statistics of many kinds, assisting the medical staff by preparing special studies and tabulating data from records for research. Supervising the day-to-day operation of a medical record department, taking records to court and maintaining the flow of health information to departments of the hospital are also parts of the total work picture.

Practice in college medical record laboratory as well as in medical record departments of cooperating hospitals and other health care facilities provides opportunities for additional educational experience which is the vital core of the program.

This curriculum is accredited by the Council on Medical Education of the American Medical Association and by the American Medical Record Association. Students in this program are eligible to take the Medical Record Accreditation Examination following graduation and upon completion receive the title of Accredited Record Technician (ART). Graduates can continue medical record education toward a baccalaureate degree at four-year colleges.

Medical Record Techonolgy

1st YEAR

Fall Semester

			Hours per Week		Credits per
			Class	Lab	Semester
BIO	131	Human Biology I	3	2	4
ENG	110	Written Expression I	3	0	3
MRT	101	Medical Record Science	2	2	3
MRT	105	Medical Terminology	2	0	2
SEC	101	*Typewriting			
		or	2	3	3
SEC	102	*Typewriting			
			12	7	15

Spring Semester

			Class	Lab	Credits
BIO	132	Human Biology II	3	2	4
ENG	120	Written Expression II	3	0	3
MAT	108	†Career Mathematics with Health Science Option	3	0	3
		or elective			
MRT	106	Terms and Transcription	2	4	4
MRT	110	Medical Record Science	2	4	4
			13	10	18

Summer Term

**MRT 144 Directed Practice .... 40 Hours per week for 4 weeks

2nd YEAR
Fall Semester

			Class	Lab	Credits
CST	110	Introduction to Data Processing	3	0	3
MOA	210	Pharmacology	2	0	2
MRT	201	Medical Record Science	2	4	4
MRT	207	Advanced Medical Transcription	1	3	3
		Social Science Elective	3	0	3
			11	7	15

Winterim

**MRT 244 Directed Practice .... 40 Hours per week for 3 weeks

Spring Semester

			Class	Lab	Credits
MRT	210	Medical Record Science	2	2	3
MRT	245	**Directed Practice	0	16	4
MRT	295	Medical Record Seminar	2	0	2
SPK	102	Effective Speaking	3	0	3
		Social Science Elective	3	0	3
			10	18	15

†MAT 108 Career Mathematics will not be required if the student has completed prior mathematics courses. An elective may be substituted.
*Based on Placement Test

****GRADUATION REQUIREMENT**

NURSING

Broome Community College offers a two-year, college-based curriculum to prepare graduates for immediate entrance into the first level of registered nursing. Graduates of this curriculum are eligible to take the New York State licensing examination for registered nurses. They are qualified for immediate employment in bedside nursing care, or they may wish to continue their education for the baccalaureate and higher degrees in the nursing field.

The curriculum operates as a college program, with classes and laboratories held on the campus. Clinical instruction is in the cooperating hospitals of the Triple Cities. The clinical experiences, which are an integral part of the Nursing curriculum, include caring for individuals in all age groups, as well as observation periods in community health and welfare agencies.

Mature men and women are encouraged to enter this program along with recent high school graduates, whether they are married or single.

Nursing student teaching crutch-walking to a patient.

Nursing

1st YEAR

Fall Semester

			Hours per Week		Credits per
			Class	Lab	Semester
*ADN	100	Meeting Basic Human Needs	5	6	7
BIO	131	Human Biology I	3	2	4
ENG	110	Written Expression I	3	0	3
PSY	110	General Psychology	3	0	3
			14	8	17

Spring Semester

			Class	Lab	Credits per Semester
*ADN	101	Nursing Care During the Life Cycle	5	6	7
BIO	132	Human Biology II	3	2	4
ENG	120	Written Expression II	3	0	3
SOC	110	Introduction to Sociology	3	0	3
			14	8	17

2nd YEAR

Fall Semester

			Class	Lab	Credits per Semester
*ADN	200	Nursing Process I	6	12	10
BIO	150	Microbiology I	3	3	4
		Free Elective	3	0-3	3-4
			12	15-18	17-18

Spring Semester

			Class	Lab	Credits per Semester
*ADN	201	Nursing Process II	6	12	10
ADN	295	Nursing Seminar	2	0	2
		Free Elective	3	0-3	3-4
			11	12-15	15-16

*Laboratory experiences for Nursing students may be scheduled during evening hours on their regular laboratory days.

Radiologic Technology students practicing proper positioning techniques in the Radiology Department of an affiliated area hospital.

RADIOLOGIC TECHNOLOGY (X-RAY)

The radiologic technologist finds employment in hospitals, with doctors who maintain private practices, with government agencies, both civil and military, and in industry. The work of the technologist consists of making radiographs used in the diagnosis of disease and injury. The technologist must also be competent in protecting the parts of the body which are not to be exposed to radiation and in operating X-ray equipment and developing film.

The Radiologic Technology program at Broome Community College consists of two academic years on campus and two summers at cooperating hospitals, the equivalent of 24 calendar months. The curriculum is an extremely active one, in which the student is responsible for maintaining academic requirements on campus as well as fulfilling the practical application of this theory at cooperating hospitals. Students should note carefully the demanding time requirements of this curriculum.

The clinical experience is a viable part of the educational process. Upon completion of 2200 hours of clinical practice as well as the academic requirements of the program, the graduate is eligible to take the New York State licensing examination and the examination of the American Registry of Radiologic Technologists. Summer clinical experience is required for graduation.

Radiologic Technology

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
BIO	131	Human Biology I	3	2	4
ENG	110	Written Expression I	3	0	3
RAD	100	Introduction to Radiologic Technology (Half Semester)	2	0	1
RAD	101	Principles of Radiologic Technology I	3	1	3
RAD	111	Ethics and the Nursing Process	1	2	2
RAD	130	Directed Practice	0	18	3
			12	23	16

Winterim I

*RAD 131 Extended Campus Laboratory — 40 Hours per week for 2 weeks

Spring Semester

BIO	132	Human Biology II	3	2	4
ENG	120	Written Expression II	3	0	3
PHY	116	Physics	2	2	3
RAD	102	Principles of Radiologic Technology II	3	0	3
RAD	132	Directed Practice	0	18	4
			11	22	17

Summer Term I

*RAD 133 Summer Extended Campus Laboratory—
40 Hours per week for 12 weeks

2nd YEAR

Fall Semester

PSY	110	General Psychology	3	0	3
RAD	210	Principles of Radiologic Physics	4	0	4
RAD	220	Introduction to Radiologic Pathology	2	0	2
RAD	230	Directed Practice	0	18	4
		Free Elective	3	0	3
			12	18	16

Winterim II

*RAD 231 Extended Campus Laboratory—40 Hours per week for 2 weeks

Spring Semester

ECO	107	Medical Economics and Law	3	0	3
RAD	215	Nuclear Medicine and Radiation Therapy	1	0	1
RAD	225	Introduction to Special Radiographic Procedures	3	2	4
RAD	232	Directed Practice	0	16	3
RAD	240	Radiation Health	2	1	2
RAD	295	Seminar in Radiography	2	0	2
			11	19	15

Summer Term II

*RAD 233 Summer Extended Campus Laboratory—
40 Hours per week for 12 weeks

***GRADUATION REQUIREMENT**

LIBERAL ARTS AND SCIENCES

The Liberal Arts curriculum is a two-year university-parallel program designed especially for those who wish to continue their college education at a four-year school. Transfer to a four-year college or university center of the State University of New York is now guaranteed to those who successfully complete this program at BCC, whether they earn the Associate in Arts or Associate in Science degrees. Graduates of the college in its Liberal Arts program receive either one of these degrees, depending on which course of study they complete. Automatic transfer to one's first-choice college is not assured, however, nor is admission to a specific major or program.

Students finishing this curriculum, its science option or its other variations will have a breadth of education that prepares them for many professional careers. The Science option, for example, is excellent for those planning careers in forestry, chemistry, biology or other scientific areas. Those aspiring to become teachers, doctors, dentists, lawyers, pharmacists or law-enforcement officers will find alternatives in the Liberal Arts curriculum designed especially for them.

Students should be aware that many of these alternative curriculums presume a high level of preparation in the secondary school, and they should consult with faculty advisors or counselors when there is doubt about the adequacy of their pre-college academic background.

Students who have identified the four-year college to which they plan to transfer should make sure that their program at Broome Community College is compatible with the curriculum at that upper-division college. For example, many four-year schools require foreign language. The decision to take a language at BCC might thus be influenced by whether it is required at the college to which one intends to transfer.

To qualify for any degree at Broome Community College, students must present a cumulative grade point average of 2.0 or above.

Associate in Arts Degree

1st YEAR *Fall and Spring Semesters*

	Hours per Week		Credits per
	Class	Lab	Semester
Written Expression	3	0	3
History (from 100 series)	3	0	3
*Mathematics or LA elective	3	3	3-4
**Science	3	3	4
Philosophy or Foreign Language	3-4	0-1	3-4
Physical Education	2	0	1
	17-19	3-4	17-19

*Students who have completed fewer than 3 units of secondary school mathematics (through 11th year math) are required to take 2 semesters of college level mathematics . . . Students who have completed 3 units of secondary school mathematics (through 11th year math) are required to take one semester of college level mathematics . . . Students who have completed more than 3 units of secondary school mathematics (including 11th year math) are not required to take additional mathematics. They may, however, elect an appropriate math course or an elective in another field.

**A full-year sequence of biology, chemistry, physics or physical science. Students may defer this course until the second year and choose an elective instead.

2nd YEAR *Fall and Spring Semesters*

Literature	3	0	3
Social Science	3	0	3
†3 LA Electives	9-12	0	9-12
Physical Education (Elective)	0-2	0	0-1
	15-20	0	15-19

†Student must take enough elective hours to fulfill degree requirement of a minimum of 64 credit hours of which only 2 can be in Physical Education.

Liberal Arts and Sciences
(Science Option)
Associate in Science Degree
1st YEAR

Fall and Spring Semesters	Hours per Week Class	Lab	Credits per Semester
Written Expression	3	0	3
History (from 100 series)	3	0	3
*Mathematics or Philosophy or Foreign Language	3-4	0	3-4
**Science	6	5-6	8
Science			
Physical Education	2	0	1
	17-18	5-6	18-19

*Students who have not passed Advanced Algebra or its equivalent in high school (usually 3½-4 units) should take Algebra and Trigonometry or Pre-Calculus the first year followed by a year of Calculus with Analytic Geometry in the second year. Students must have the equivalent of Calculus with Analytic Geometry to take the non-math elective.

**A sequence in biology, chemistry or physics. The second science course may be from these same choices.

2nd Year

Fall and Spring Semesters			
Literature	3	0	3
Social Science	3	0	3
†Science	6	5-7	8-9
Science			
††Mathematics or LA Elective	3-4	0	3-4
Physical Education (Elective)	0-2	0	0-1
	15-18	5-7	17-20

†A sequence in biology, chemistry, or physics. The second science course may be from these same choices.

††Electives must be philosophy or a foreign language unless one of these was taken in the first year. Mathematics may be elected only with the Dean's approval if the Calculus with Analytic Geometry requirement was met in the first year.

MODEL CAREER PROGRAMS

The following programs are shown as typical "models" for the careers indicated and should not be regarded as inflexible in the courses cited. These models are designed to give a student a chance to earn the Associate in Arts or the Associate in Science degrees at BCC, so that he/she can continue at a four-year college or university in pursuit of a baccalaureate degree in the particular field.

PRE-LAW (A.A. Degree)

First Year

- Science
- Written Expression
- History
- Foreign Language
- Mathematics
- Physical Education

Second Year

- Political Science
- Sociology
- Literature
- 1-Term Courses
  - General Psychology
  - Effective Speaking
  - American Economic History
  - Logic
- Physical Education (elective)

CRIMINAL JUSTICE (A.A. Degree)

First Year

- Written Expression
- U.S. History
- Mathematics or elective
- Introduction to Sociology
- General Psychology
- 2 Criminal Justice Courses*
- Physical Education

Second Year

- Literature
- Chemistry
- Sociology or Psychology elective
- Introduction to Philosophy
- Philosophy elective
- 3 Criminal Justice Courses*
- Physical Education (elective)

*Criminal Justice courses are offered in the evening only.

PRE-MEDICINE OR PRE-DENTAL (A.S. Degree)

First Year

- Biology
- Chemistry
- Written Expression
- Calculus with Analytic Geometry
- History
- Physical Education

Second Year

- Organic Chemistry
- Physics
- General Psychology
- Social Science elective
- Literature
- Foreign Language
- Physical Education (elective)

PRE-PHARMACY (A.S. Degree)

First Year

- Biology
- Chemistry
- Written Expression
- History
- Calculus with Analytic Geometry
- Physical Education

Second Year

- Organic Chemistry
- Physics
- Introduction to Philosophy
- Philosophy elective
- Economics
- Literature
- Physical Education (elective)

MUSIC (A.A. Degree)

First Year

- Written Expression
- Humanities or German or Italian
- Mathematics, a Liberal Art
- Introduction to Music
- Music of an Historical Period
- Development of Western Civilization
- Physical Education (Modern Dance)

Second Year

- Literature
- Psychology
- Biology
- Music Theory
- Applied Music
- Physical Education (elective)

PHYSICAL EDUCATION

First Year

- Written Expression
- Introduction to Philosophy
- History
- Biology
- Mathematics
- 3 elective credits
- Physical Education

Second Year

- Literature
- General Psychology
- Introduction to Sociology
- Effective Speaking
- Human Biology
- 9 elective credits
- Physical Education

JOURNALISM (A.A. Degree)

First Year

- Written Expression
- History
- Ethics
- Logic
- Science
- Mathematics or elective
- Physical Education

Second Year

- Literature
- General Psychology
- Introduction to Sociology
- Social Problems
- Literature
- Political Science
- Speech
- Social Science and Public Affairs or Literature elective
- Physical Education (elective)

BUSINESS MODEL (A.A. Degree)

(For transfer to SUNY Binghamton)

First Year

- Written Expression
- History
- Mathematics
- Introduction to Philosophy or Foreign Language
- Philosophy Elective or Foreign Language
- Principals of Management
- Statistics
- Physical Education

Second Year

- Literature
- Science
- Accounting
- Economics
- Fortran
- Behavioral Approach to Management
- Physical Education (elective)

FOREST TECHNOLOGY MODEL
(A.A.S. Degree)

By arrangement with the State University College of Environmental Science and Forestry [N.Y. State Ranger School at Wanakena], a two-year program leading to the Associate in Applied Science Degree)

1st YEAR at B.C.C.

Written Expression
General Biology
Mathematics
(College Algebra and Trigonometry)
Economics
Accounting
Graphics

2nd Year at Wanakena Campus*

Apply during Senior Year in High School to SUNY—N.Y. State Ranger School, Wanakena Campus, Wanakena, N.Y. 13695 and at Broome Community College informing both institutions of interest to complete first year at B.C.C.

*Degree conferred at Wanakena

CHILD CARE MODEL
(A.A. Degree)

First Year

Written Expression
Introduction to Sociology
General Psychology
Mathematics
Human Biology
Introduction to Education of Young Children
Curriculum Development
Physical Education

Second Year

Literature
Philosophy or Foreign Language
History
Social Psychology of Education
Child Care electives
Child Development

THEATRE MODEL (A.A. Degree)

First Year

Written Expression
Mathematics
Western Civilization
Introduction to Theatre
Theatre Practicum
Humanities or Foreign Language
Physical Education (Modern Dance)

Second Year

Literature elective
American Drama
Psychology
Biology
Acting
Children's Theatre

MENTAL HEALTH MODEL
(A.A. Degree)

First Year

Written Expression
Humanities (or Foreign Language)
Biology
General Psychology
Developmental Psychology
Introduction to Sociology
Social Problems
Physical Education

Second Year

History
Mathematics
Literature
Mental Health (Evenings)
Abnormal Psychology (Spring)
Behavioral Modification (Evenings)
Crime and Deviant Behavior
Physical Education (elective)

ART MODEL (A.A. Degree)

First Year

Written Expression
Introduction to Art
Sculpture Fundamentals
Humanities or Italian
Mathematics
Studio Art
Physical Education

Second Year

Literature
Western Civilization
Human Biology
Psychology
Studio Art

SPECIAL EDUCATION MODEL
(A.A. Degree)

First Year

Written Expression
History Elective
Introduction to Philosophy, Philosopohy Elective
Modern Basic Math
Human Biology
Physical Education

Second Year

Literature Elective
Psychology
Physical Science
Fine Arts (Full Year)
Introduction to Sociology, Effective Speaking
Physical Education

PRE-EDUCATION MODEL
(A.A. Degree)

First Year

Written Expression
Science
Appropriate Philosophy or Foreign Language
Mathematics
History
Physical Education

Second Year

Literature
General Psychology
Speech
Introduction to Sociology
Philosophical Issues in American Education
12 elective credits
Physical Education (elective)

SCIENCE AND ENGINEERING TECHNOLOGY DIVISION

Chemistry students determining the refractive index of a liquid during an experiment in the Chemical Processes Laboratory.

CHEMICAL TECHNOLOGY

The Chemical Technology curriculum is designed to meet the increasing demand for chemical technicians. Graduates of the Chemical Technology program have the education and training which qualifies them for immediate gainful employment and/or further study for advanced degrees. This background makes the Chemical Technology graduates highly sought after by employers and concurrently affords them the flexibility to advance academically.

Chemical technicians of both sexes have filled a vital manpower need in companies and organizations where background in various areas of chemistry is necessary or desirable. The constant development of new products, for example, creates a demand for chemical technicians.

Employers of chemical technicians include IBM, GAF, Eastman Kodak, Allied Chemical, DuPont, Norwich Pharmacal, General Electric, American Cyanamid, Union Carbide, Bristol Laboratories, Warner-Lambert and many other industrial firms as well as government agencies, hospitals and educational institutions.

Initial positions are usually in a research, development, process, quality control or analytical laboratory or in a pilot plant. In these positions a chemical technician may work for a senior staff member or be a member of a group working in a particular area. Experienced chemical technicians have become supervisors, group leaders, technical salesmen and research and development technicians.

Chemical Technology

1st YEAR

Fall Semester

			Hours per Week Class	 Lab	Credits per Semester
ENG	100	Basic Language Skills or	3	0	3
ENG	110	Written Expression I			
CHM	145 or	CHM 161 Chemistry	3	3	4
MAT	141	College Algebra & Trigonometry	4	0	4
PHY	141	Physics	3	2	4
			13	5	15

Spring Semester

			Hours per Week Class	 Lab	Credits per Semester
ENG	150	Technical Writing	3	0	3
CHM	146 or	CHM 162 Chemistry	3	3	4
MAT	142	Applied Calculus I	4	0	4
PHY	142	Physics	3	2	4
CST	122	Scientific Computer Programming—FORTRAN	1-2	2	2-3
			14-15	7	17-18

2nd YEAR

Fall Semester

			Hours per Week Class	 Lab	Credits per Semester
CHM	245 or	CHM 261 Organic Chemistry	3	4-6	5
CHM	265	Analytical Chemistry	3	6	5
CHM	271	Chemical Processes	3	4	5
		Social Science Elective	3	0	3
			12	14-16	18

Spring Semester

			Hours per Week Class	 Lab	Credits per Semester
CHM	246 or	CHM 262 Organic Chemistry	3	4-6	5
CHM	266	Analytical Chemistry	3	6	5
CHM	272	Chemical Processes	3	4	5
		Social Science Elective	3	0	3
			12	14-16	18

GRADUATION REQUIREMENT: 68 CREDITS

CIVIL TECHNOLOGY

The construction industry, considering all related goods and services such as manufacturing and transportation, is the largest industry in the country. This curriculum is designed to provide the basic education for beginning entry positions in the civil engineering and construction industries.

Graduates of this program begin their careers as engineering technicians and are qualified to work as assistants to professional and supervisory persons, such as engineers, architects, construction superintendents, surveyors and contractors. They may also find employment with agencies of the Federal, state and local governments.

Starting positions may be in drafting design, estimating, testing of materials, specification writing, inspection, surveying and sales. Excellent opportunities exist for advancement and promotion.

The Civil Technology Department offers two degrees: 1) the Associate in Applied Science in Civil Technology is offered during the day. This degree is accredited by the Engineers Council for Professional Development (ECPD). 2) the Associate in Applied Science in Industrial Technology, Civil Technology major, is offered in the evening. Starting salaries for graduates range from $7,500 to $12,000.

The energy crisis has brought a great increase in activity to make this country self-sufficient. Billions of dollars will be spent on nuclear and fossil fuel electric generating plants. Other billions of dollars will be used for clean air and water facilities.

Civil Technology student using an engineers level in a differential leveling exercise.

Civil Technology

1st YEAR

Fall Semester

			Hours per Week Class	Hours per Week Lab	Credits per Semester
CIV	111	Surveying I	2	6	4
CIV	117	Architectural Drafting I	1	3	2
EGR	110	Introduction to Technologies	1	0	½
ENG	110	Written Expression I			
		or	3	0	3
ENG	100	Basic Language Skills			
MAT	141	College Albegra & Trigonometry	4	0	4
PHY	141	Physics	3	2	4
			14	11	17½

Spring Semester

			Class	Lab	Credits
CIV	112	Surveying II	1	3	2
CIV	118	Architectural Drafting II	1	3	2
CIV	124	Mechanics	3	0	3
MAT	142	Applied Calculus I	4	0	4
PHY	142	Physics	3	2	4
		Social Science Elective	3	0	3
			15	8	18

2nd YEAR

Fall Semester

			Class	Lab	Credits
CIV	215	Strength of Materials	4	0	4
CIV	217	Materials Testing	2	3	3
		Technical Electives (Choose 2)			
CIV	231	Estimating & Construction Planning	2	3	3
CIV	235	Hydraulics	3	3	4
CST	122	Scientific Computer Programming—FORTRAN	2	2	3
MAT		Mathematics Elective	3	0	3
		Social Science Elective	3	0	3
			13-15	5-9	16-17

Spring Semester

			Class	Lab	Credits
ENG		English Requirement	3	0	3
		Technical Electives (Choose at least 13 credits)			
CIV	212	Route Surveying and Photogrammetry	3	3	4
CIV	224	Reinforced Concrete Design	2	3	3
CIV	226	Structural Steel Design	2	3	3
CIV	236	Construction Management	3	0	3
CIV	234	Building Design	2	3	3
CIV	240	Soil Mechanics	2	3	3
CIV	244	Environmental Sanitation	3	0	3
CIV	299	Independent Study	0	0	2-4
MAT		Mathematics Elective	3	0	3
			13-15	6-15	16-18

GRADUATION REQUIREMENT: 67½ CREDITS

ELECTRICAL TECHNOLOGY

The Electrical Technology program at Broome Community College is made up of a planned sequence of college level courses leading to the associate degree, and it is designed to prepare men and women to work in the field of engineering technology. Engineering technology is concerned primarily with the application of established scientific and engineering knowledge and methods.

The graduate of the electrical program is an electrical technician who is trained to be the interface between the graduate engineer and the skilled craftsman.

The technician translates problems into functioning equipment, using his knowledge in mathematics, electronics, circuit analysis and computer technology. He does this whether he is working in a small company as the only technician or in a large company as part of a team.

The technician works for companies like New York State Electric and Gas, International Business Machines, Xerox, Eastman Kodak, General Electric, General Aniline and Film, Universal Instruments, Raymond Corporation, National Cash Register, Bell Labs and Corning Glass. Starting positions include technical sales representative, engineering assistant, computer technician and electronics technician.

Many technicians find that more education is desirable. While their basic education is not transfer-oriented, graduates of Broome Community College have successfully completed advanced study at State University of NY colleges, Rochester Institute of Technology, Clarkson College of Technology, Tri-State College, University of Arizona, University of Houston, University of Miami and others.

The program is fully accredited by the Engineers Council for Professional Development.

Instructor assisting Electrical Technology students in obtaining proper readings on an oscilloscope. In the Electronics Laboratory.

Electrical Technology

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
CST	122	Scientific Computer Programming—FORTRAN	2	2	3
EET	111	Electrical Construction Laboratory I	1	3	2
EET	121	Electrical Circuits	4	3	5
EGR	110	Introduction to Technologies	1	0	½
ENG	110	Written Expression I or	3	0	3
ENG	100	Basic Language Skills			
MAT	141	College Algebra & Trigonometry	4	0	4
			15	8	17½

Spring Semester

			Hours per Week		Credits per Semester
			Class	Lab	
EET	112	Electrical Construction Laboratory II	0	3	1
EET	130	Engineering Drawing	0	3	1
EET	150	Electronics I	4	3	5
MAT	142	Applied Calculus I	4	0	4
PHY	141	Physics	3	2	4
ENG	150	Technical Writing	3	0	3
			14	11	18

2nd YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
EET	241	Electrical Machines & Controls I	3	3	4
EET	251	Electronics II	3	3	4
EET	261	Network Analysis	3	0	3
PHY	142	Physics	3	2	4
		Social Science Elective	3	0	3
			15	8	18

Spring Semester

			Hours per Week		Credits per Semester
			Class	Lab	
EET	230	Electronic Design & Fabrication	0	3	1
EET	242	Electrical Machines & Controls II	4	3	5
EET	252	Electronics III	3	3	4
EET	266	Analog & Digital Circuits	4	0	4
		Social Science Elective	3	0	3
			14	9	17

GRADUATION REQUIREMENT: 70½ CREDITS

ENGINEERING SCIENCE

The level of work covered in the Engineering Science curriculum is primarily designed to prepare graduates to continue their studies in the engineering field in four-year colleges and universities. But there are also employment opportunities for qualified graduates.

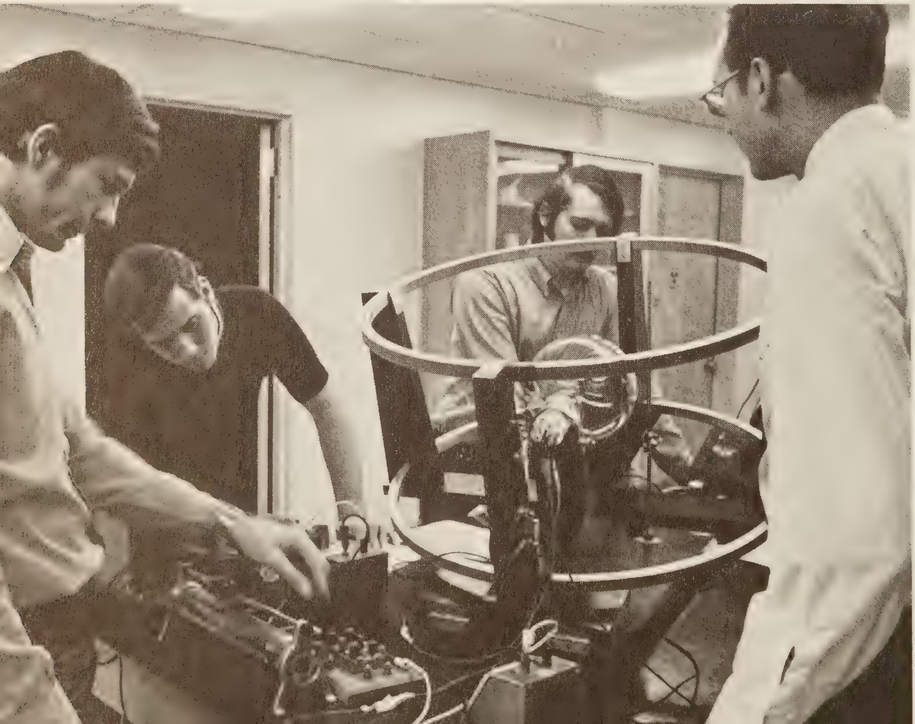
The emphasis in this program is on mathematics and physics, so that graduates can transfer to four-year schools into the junior year in physics, engineering and mathematics.

Broome Community College is a member of the New York State Two-Year/Four-Year Engineering College Curriculum Study Committee. This organization's purpose is to facilitate the transfer to four-year colleges, with junior-year standing, of two-year college graduates from engineering science programs. Rensselaer Polytechnic Institute (RPI), Clarkson, Cornell, Syracuse, Union and State University at Buffalo are among the members of the Two-Year/Four-Year Engineering College Curriculum Study Committee who have agreed to accept those two-year college graduates who have been recommended by their Engineering Science departments.

Some of the job opportunities for those who prefer to seek immediate employment lie in the engineering technician field as assistants to engineers in research and development and positions involving the application of mathematics.

Students entering Broome Community College who wish to continue studying for their bachelors' degrees in engineering, applied mathematics or physics will find this the most appropriate course of study.

Students making final adjustments in an atomic experiment, which will yield the ratio of change to mass of an electron. In the College's Radiation Laboratory.



Engineering Science

1st YEAR

Fall Semester

			Hours per Week		Credits per Semester
			Class	Lab	
CHM	145	Chemistry	3	3	4
CST	124	Computer Programming for Engineers	2	3	3
MAT	171	Engineering Calculus with Analytic Geometry I	4	0	4
MET	115	Graphics	1	2	2
PED		Physical Education Elective	0	2	1
		English or Literature Elective	3	0	3
			13	10	17

Spring Semester

			Class	Lab	Credits per Semester
CHM	146	Chemistry	3	3	4
MAT	172	Engineering Calculus with Analytic Geometry II	4	0	4
PHY	172	Physics	4	0	4
PED		Physical Education Elective	0	2	1
		English or Literature Elective	3	0	3
			14	5	16

2nd YEAR

Fall Semester

			Class	Lab	Credits per Semester
EGR	271	Mechanics	4	0	4
EGR	277	Engineering Science Laboratory I	1	3	2
MAT	271	Engineering Calculus with Analytic Geometry III	4	0	4
PHY	271	Physics (Electricity & Magnetism)	4	0	4
		Social Science Elective	3	0	3
			16	3	17

Spring Semester

			Class	Lab	Credits per Semester
EGR	274	*Electrical & Electronic Circuits	4	0	4
EGR	278	Engineering Science Laboratory II	1	3	2
MAT	272	Differential Equations with Linear Algebra	4	0	4
PHY	272	Physics (Modern)	4	0	4
		Social Science Elective	3	0	3
			16	3	17

*Or approved engineering option

GRADUATION REQUIREMENT: 67 CREDITS

Mechanical Technology student calibrating an electro-limit gauge for use in measuring a gear blank. In the Manufacturing Processes Laboratory.

MECHANICAL TECHNOLOGY

The continuing thrust for faster and more economical manufacturing methods, more reliable systems and the need for new, clean and consistent sources of energy has generated an increased demand for mechanical technicians with a high degree of technical competence.

The curriculum outline on the facing page encompasses a blend of mathematics, science, English, social science and technical specialties conceived to generate the necessary background for a variety of entry positions in Mechanical Technology. These entry positions usually align closely with and support mechanical engineering or related functions.

Recent graduates have been employed in areas of design-drafting, product design, quality control, metallurgy, heat-power, purchasing, sales, technical writing and system maintenance. Job opportunities exist both locally and nationally.

Recruitment of graduates for employment by companies large and small is active year round. Mechanical Technology is a particularly lucrative field for the female. Although few have ventured into the field, those who have are highly successful and happy. Industry is currently starving for female technicians.

This curriculum is accredited by the Engineers Council for Professional Development.

Mechanical Technology

1st YEAR

Fall Semester

			Hours per Week		Credits per
			Class	Lab	Semester
EGR	110	Introduction to Technologies	1	0	½
MAT	141	College Algebra & Trigonometry	4	0	4
MET	111	Engineering Drawing I	1	2	2
MET	121	Manufacturing Processes I	2	2	3
PHY	141	Physics	3	2	4
ENG	110	Written Expression I			
		or	3	0	3
ENG	100	Basic Language Skills			
		Social Science Elective	3	0	3
			17	6	19½

Spring Semester

			Class	Lab	Credits
MAT	14	Applied Calculus I	4	0	4
MET	112	Engineering Drawing II	1	2	2
MET	122	Manufacturing Processes II	1	3	2
MET	132	Applied Mechanics	4	0	4
PHY	142	Physics	3	2	4
ENG		English Requirement	3	0	3
			16	7	19

2nd YEAR

Fall Semester

			Class	Lab	Credits
CST	122	Scientific Computer Programming—FORTRAN	2	2	3
EET	185	Electricity	2	2	3
MET	235	Strength of Materials	2	3	3
MET	241	Fluid Mechanics and Thermodynamics	2	3	3
MET	261	Engineering Statistics, Quality Control & Reliability	2	2	3
		Social Science Elective	3	0	3
			13	12	18

Spring Semester

			Class	Lab	Credits
EET	186	Electronics	2	2	3
MET	238	Mechanical Design	3	3	4
MET	252	Engineering Materials & Industrial Processes			
MET	244	Thermodynamics			
		*Technical Elective	(2-3)	(2-0)	(3)
			10	11	14

*Not a degree requirement. Student may select appropriate course(s)

GRADUATION REQUIREMENT: 70½ **CREDITS**

Industrial Technology

The Industrial Technology curriculum provides an educational opportunity for those students who desire two years of technical education with a non-calculus mathematics approach. (Exception: the Applied Mathematics major). The Industrial Technology curriculum is a general engineering technology with specific majors and allows a student the choice of elective courses in several technical specialties. Each of the "majors" (Chemical, Civil, Electrical, Applied Mathematics, Mechanical and Production Management) provides opportunities for the student to structure a program that is applicable to employment needs.

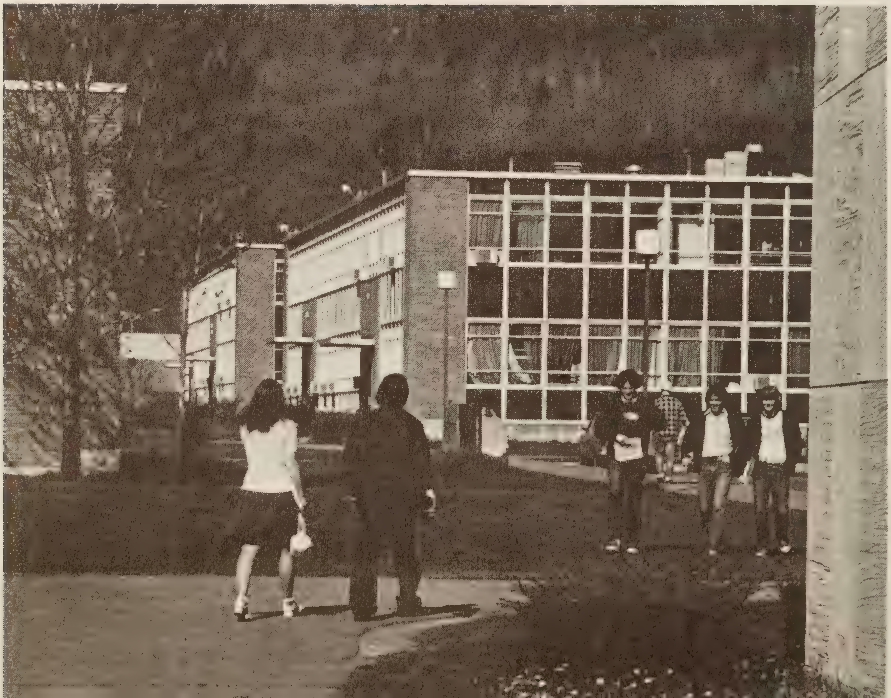
Academic units can be transferred between the Industrial Technology program and the full-time specific technical curricula with the approval of the dean of the division.

A total of 60 to 64 semester hours is required for the A.A.S. degree. A diploma may be granted at the completion of 30 to 32 semester hours. Departmental approval is required for both the degree and the diploma.

Program requirements vary from department to department. Students are advised to consult with the dean of the division.

Bachelor of Technology Opportunity

SUNY at Binghamton offers a Bachelor of Technology program, for which the normal admission requirement is an AAS degree in an engineering technology discipline. An AAS degree in Industrial Technology is acceptable, provided the student has completed MAT 142 Applied Calculus I and the Physics sequence of PHY 141 and PHY 142.



COURSE DESCRIPTIONS

(The courses numbered from 100 to 199 are generally first-year courses, and those numbered in the 200's are usually taken by second-year students.)

BUSINESS DIVISION

Accounting & Business Administration Dept.
Marketing Management Dept.

BUS 100 Accounting I — 4 Credits

Basic concepts and procedures in the accounting cycle. Emphasis on journals, ledgers and financial statements, payroll systems and merchandise inventory systems.
4 Class Hours

BUS 101 Accounting II — 4 Credits

Deferrals and accruals, plant assets and intangible assets, partnerships, corporations and manufacturing.
4 Class Hours
Prerequisite: BUS 100 Accounting I

BUS 102 Payroll Accounting — 2 Credits

A comprehensive study of Federal and State laws and regulations affecting payrolls and payroll taxes. Practical report preparation and reporting requirements. Proper accounting practices to record payroll taxes.
2 Class Hours

BUS 110 Introduction to Business — 3 Credits

General background of modern business practices through the study of organization and management, production, human resources, accounting and finance, marketing, and the information needed for control and management decisions in business and society.
3 Class Hours

BUS 112 Business Mathematics — 2 Credits

Number systems and arithmetic processes. Problems in percentage, simple interest, compound interest, discounting notes, depreciation, insurance, taxes and problems in marketing.
2 Class Hours

BUS 115 Business Statistics — 3 Credits

Concepts and mechanics of measures of central tendency, measures of dispersion, probability and correlation as they relate to general problems in business and economics.
3 Class Hours
Prerequisite: MAT 105 Career Mathematics with Business Option or equivalent

BUS 118 Business Law I — 3 Credits

Law as an evolutionary and democratic process. New York State and Federal court structures and procedures, law of contracts, legal principles of agency and partnerships.
3 Class Hours

BUS 120 Business Law II — 3 Credits

The law governing the negotiation or transfer of commercial paper and the sale of personal property. The law of personal and real property and sundry topics: bailments, insurance, landlord-tenant relationships, corporate and labor law.
3 Class Hours
Prerequisite: BUS 118 Business Law I

BUS 125 Real Estate Law 5 Credits

For real estate people preparing for the New York State Real Estate Broker's Licensing Examination. Under the supervision of the New York State Department of Licenses. (Credits applicable only to Business program with prior approval from the Business Division.) **5 Class Hours**

BUS 131 Personal Finance 3 Credits

Guidelines to everyday financial problems regarding budgeting, installment buying, credit, insurance, taxes, savings, investments and purchasing such long-term investments as a home or automobile. **3 Class Hours**

BUS 133 Consumerism 2 Credits

Malpractices in the marketplace, including deceptive advertising, price abuses, poor servicing and credit. How to get involved in consumer movements and to become familiar with consumer legislation and appropriate agencies. **2 Class Hours**

BUS 135 Investments 2 Credits

Application of sound investment principles as they relate to stocks and bonds. Importance of the stock markets, their operation and their place in our society. Current happenings such as over-all market behavior, stock splits, rights and offerings will be studied in various companies, making the subject matter current and relevant to financial events of the day. A model portfolio approach with weekly review by class participants. **2 Class Hours**

BUS 138 Income Tax I 1 Credit

Basic Federal income tax rules and regulations for the preparation and filing of personal income tax forms. Personal exemptions, exemptions for dependents, gross income inclusions and exclusions, itemized and standard deductions, tax tables and rates. **1 Class Hour**

BUS 139 Income Tax II 1 Credit

Preparation of personal income tax returns involving more complicated items, such as capital gains and losses, rental property, dividends, other income and special deductions. **1 Class Hour**

BUS 141 Marketing 3 Credits

Distributive phase of economics, from the time a good or service is produced up to the point of consumption. Emphasis on managerial planning and strategy formulation. Consumer's role (consumerism) and the marketing mix (product, place, price, promotion). Lectures, discussion, case problems. **3 Class Hours**

BUS 144 Domestic Transportation 2 Credits

Analysis of practices, theories and policies of the transport network. Study of transportation changes—in the locations and movements of goods and people as well as in the physical and institutional organizations (mergers, conglomerates) and their effect on the entire scope of transportation. **2 Class Hours**

BUS 149 Management and Organization I 2 Credits

Fundamentals of organization and management of industrial and business concerns.. Inter-relationships of the management functions including purchasing, production, sales, marketing, personnel and finance. **2 Class Hours**

BUS 150 Personnel Administration 2 Credits

Techniques and methods to achieve utilization of manpower in business through proper selection, placement, training, job evaluation, wage setting and employee relations. **2 Class Hours**

BUS 152 Salesmanship 3 Credits

Principles of sales with practical applications. Steps leading to a successful sale—prospecting, planning and delivering, dramatizing, handling objections, closing, building goodwill. Development and presentation of a complete procedure for a product or service. **3 Class Hours**

BUS 154 Purchasing 3 Credits

Analytical approach to techniques employed in the industrial purchasing phase of marketing. Emphasis on the organization of the purchasing function as an operational unit of the firm directed toward procurement activities.
3 Class Hours

BUS 157 Business Report Writing 3 Credits

Training in logical analysis of business case problems, applied to the preparation of accurate written reports. Methods and skills in formal and informal business writing. Preparation of tables, charts, reference citations and bibliographies. Improvement of basic business writing skill involved in interoffice memos, letters of adjustment, bids, quotations, public relations. **3 Class Hours**

BUS 160 Real Estate 3 Credits

Economic and social impact of real estate. Emphasis on the real estate cycle dealing with the essentials of real property, finance and legal aspects.
3 Class Hours

BUS 165 Insurance 3 Credits

Insurance principles and coverage, types of carriers, organizations, history of insurance, analysis of types of coverage available for business and individuals in the casualty and life fields. **3 Class Hours**

BUS 170 Insurance for Agents and Brokers 8 Credits

Comprehensive survey of insurance. Fire, marine, automobile, owner liability, burglary, boiler, machinery, accident and health, fidelity and surety insurance. Insurance law and duties of the agent. **8 Class Hours**

BUS 200 Intermediate Accounting I 4 Credits

An intensive study of accounting theory and procedures. Emphasis on balance sheet accounts and their interrelationships with income statement accounts. The accounting process and correction of errors. Advanced treatment of cash, receivables, inventories. **4 Class Hours**
Prerequisite: BUS 101 Accounting II

BUS 201 Intermediate Accounting II 4 Credits

A more advanced treatment of accounting for fixed assets, intangible assets, current and long-term liabilities. Corporation accounting, funds flow reporting, financial statement analysis. **4 Class Hours**
Prerequisite: BUS 200 Intermediate Accounting I

BUS 205 Cost Accounting I 4 Credits

Nature and purpose of cost accounting. Job order and process costing. Accounting for factory overhead and analysis of variances. Accounting for labor and material. **4 Class Hours**
Prerequisite: BUS 101 Accounting II

BUS 206 Cost Accounting II 4 Credits

Further consideration of cost accounting principles, standard costs and variances. The construction of budgets, profit planning. Flexible budgets. Direct costing. Break even analysis. Accounting for by-products and joint products. Nonmanufacturing costs. **4 Class hours**
Prerequisite: BUS 205 Cost Accounting I

BUS 207 Managerial Accounting I 2 Credits

Use of accounting information by management in decision making. Accounting procedures for the evaluation of performance and responsibility accounting in business and industry. **2 Class Hours**

BUS 208 Managerial Accounting II 2 Credits

Relationship of accounting information to such areas of managerial responsibilities as planning and control, cash budgeting and cash flow, relevant cost analysis, profit planning and the effects of price level changes. **2 Class Hours**

Prerequisite: BUS 207 Managerial Accounting I

BUS 220 Financial Information Systems 3 Credits

Development of practicable accounting systems to provide the information required for effective managerial control. Techniques of flow charting, devoloping written procedures, analysis of organization structures, form design applied to the basic areas of business. **2 Class Hours, 2 Laboratory Hours**

Prerequisites: BUS 101 Accounting II and CST 110 Introduction to Data Processing

BUS 221 Mathematics for Business Analysis 2 Credits

Basic quantitative mathematical methods for management. Techniques and their application to business problems. Foundation for further study of advanced principles of quantitative analysis. **2 Class Hours**

Prerequisite: BUS 112 Business Mathematics

BUS 224 Business Finance 3 Credits

Financial principles and procedures. Detailed analysis of forms of business organizations. Single proprietorship, partnerships and corporations together with all financial instruments, surplus, reserves and equities. Application of ratios, rules for budgeting, capitalization, insurance, reorganization. **3 Class Hours**

BUS 226 Credit and Collections 3 Credits

Nature and role of credit, credit management, types of credit, credit department organization, credit reports and investigation, collection procedures, investigation and analysis of mercantile and financial institution credit risks, analysis of financial statements. **3 Class Hours**

Prerequisite: BUS 100 Accounting I

BUS 229 Advertising 4 Credits

Development, economics, functions of advertising. Cost application, media, testing and research methods. Development of advertisements, copy and layout, methods and problems of reproduction. Planning the advertising campaign with step by step developments. Lectures, discussions, demonstrations.

4 Class Hours

Prerequisite: BUS 141 Marketing

BUS 238 Marketing Research 3 Credits

Methods of collecting and interpreting marketing information which affect marketing management. Specific applications to problem identification in market development, gauging market potential and implementation of research designs in the market place. **3 Class Hours**

Prerequisite: BUS 115 Business Statistics

BUS 242 Marketing Seminar 3 Credits

Senior capstone course which integrates various business subjects previously studied. Individual and team approach to analysis of comprehensive marketing and management cases and cooperative consideration of alternative decisions to problem solving. **3 Class Hours**

Prerequisite: Permission of Chairperson of Marketing Management Department for non-marketing majors.

BUS 243 Management and Organization II 2 Credits

Concepts and theories of the administrative process. Planning, controlling, decision-making, policy formulation and budgeting. **2 Class Hours**

Prerequisite: 5 years business/industry experience or BUS 149 Management and Organization I

BUS 245 Management: A Behavioral Approach 3 Credits

A comprehensive analysis of managerial theories and an integration of selected social sciences to investigate organizational problems related to managerial functions. Communications, decision-making, control theory. Impact of the organizational environment upon human behavior. **3 Class Hours**

BUS 247 Sales Management 3 Credits

Development of control techniques in the administration of sales forces. Incentive systems, territory planning, development of sales potentials, personnel problems peculiar to this field. **3 Class Hours**

BUS 249 Principles of Personnel Management 3 Credits

Principles of managerial practices. The four functions of management—planning, organizing, directing and controlling. Designed to expose the student to the proper methods and techniques to achieve employee and job satisfaction. Processing, developing, maintaining and proper utilizing of the labor force. A review of the history and impact of organized labor incorporating economics, political and social pressures which influence employment.

Effective interview poise, personal appearance, interviewing techniques, job opportunities and placement services. Correct preparation of a resumé and the utilization of references. **3 Class Hours**

Sales demonstration being video-taped in the Business Division's TV Recording Studio.

BUS 252 Supervision of Personnel 2 Credits

Concepts and psychology of personnel supervision. Emphasis on the application of management theory through use of case studies and classroom discussions. **2 Class Hours**

BUS 255 Industrial Labor Relations 2 Credits

Processes of bargaining and contract administration between industrial employers and unions representing employees, as a system of compromising opposing objectives and settling differences. Origins of unions, how they organize and gain recognition and how the labor agreement is negotiated and administered. Interaction among employees, stewards and supervisors. Labor laws. Institutions such as the National Labor Relations Board, mediation services, arbitration boards and courts. **2 Class Hours**

BUS 256 Labor Relations for Business and Industry 3 Credits

Analysis of labor relations and collective bargaining procedures. Policies of organized labor, employers and government in solving labor-management disputes. Grievance procedure, wage and price policies, arbitration, mediation, negotiations and labor contracts. **3 Class Hours**

BUS 258 Human Relations in Business 2 Credits

Basic psychological principles applied to the problems of employee selection, training, evaluation, merit rating and advancement. Social interaction and human relations in industry. Motivation concepts and techniques, job satisfaction, morale, conference leadership and employee and management development.

2 Class Hours

BUS 260 Management of Physical Distribution — Transportation 2 Credits

Rates, documentation and career liability (legal implications), factors in routing transportation in the milieu of physical distribution and current issues in the field. **2 Class Hours**

Prerequisite: BUS 141 Domestic Transportation

BUS 262 Small Business Management 3 Credits

Designed for those interested in small business as owner-managers. Development of sound management and modern techniques covering organization, financing, insurance risk, legal implications, regulations, taxes. **3 Class Hours**

BUS 264 Retailing 3 Credits

Fundamentals of purchasing, merchandising, pricing, promotion. Principles of retail management. Coordination of accounting and basic marketing concepts at the market focal point. **3 Class Hours**

BUS 295 Accounting Seminar 3 Credits

In-depth treatment of accounting for income taxes and payroll taxes. Concepts of conservatism, realization, going concern, current vs. historical costs. Current trends in accounting for leases, research and development costs, inventory pricing and depreciation disclosures. **2 Class Hours, 2 Laboratory Hours**

BUS 299 Independent Study 1-4 Credits

The student, under the guidance of a faculty member, undertakes an investigation, study and research in an advanced concept or problem concerning his/her major field of study. Only one independent study course is allowed per semester.

Prerequisite: Approval of Faculty Member and Department Chairman

Secretarial Sciences Dept.

SEC 101 Typewriting 3 Credits

Beginning sequence in touch typewriting to make the operator accurate, rhythmical and rapid in the operation of the typewriter. Development of proficiency of techniques of typing business letters, tabulations, reports, miscellaneous business forms. Building of typewriting speed and accuracy.

2 Class Hours, 3 Laboratory Hours

SEC 102 Typewriting 3 Credits

Continuation of basic skill building with emphasis on speed and accuracy in typing advanced materials, such as rough drafts, complicated tabulations, manuscripts, legal papers and specifications. **2 Class Hours, 3 Laboratory Hours**

Prerequisite: SEC 101 Typewriting or equivalent

SEC 103 AVT Typewriting 3 Credits

Development of the basic techniques of typewriter operation by an audio-visual-tutorial system (AVT) of instruction which permits the student to proceed at own pace. Slide-tape presentations include keyboard mastery, machine operation, horizontal and vertical centering, business applications such as letters, manuscripts, outlines, tabulations, forms. Building of typewriting speed and accuracy.

SEC 104 AVT Typewriting 3 Credits

Continuation of basic skill building with emphasis on speed and accuracy in typing advanced materials by an audio-visual-tutorial system (AVT) of instruction which permits the student to proceed at own pace. Slide-tape presentations include letter styles and notations, manuscripts, advanced tabulation, alignment, applications, data sheets, memorandums, business statements and forms.

Prerequisite: SEC 103 AVT Typewriting
or SEC 101 Typewriting or equivalent

SEC 105 Introductory Typewriting 2 Credits

Touch typewriting. Presentation of keyboard, typing of centering problems, memorandums, postal cards, personal and business letters, outlines, manuscripts. Emphasis on speed and accuracy. **2 Class Hours, 2 Laboratory Hours**

SEC 106 Intermediate Typewriting 2 Credits

Continued speed and accuracy emphasis. Typing of business letters, manuscripts, memorandums, tables, various business forms, financial statements, data sheets, employment applications. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: SEC 105 Introductory Typewriting or equivalent

SEC 107 Advanced Typewriting 2 Credits

Continued speed and accuracy emphasis. Typing of business letters, governmental correspondence, tables, reports, financial statements, preparation of stencils and spirit masters. Materials from the technical, medical and legal fields.

2 Class Hours, 2 Laboratory Hours
Prerequisite: SEC 106 Intermediate Typewriting or equivalent

SEC 110 Shorthand 3 Credits

Beginning course in Gregg Shorthand, Diamond Jubilee System. Basic principles to promote the ability to read fluently from plates and notes. Longhand and typewritten transcription from shorthand notes dictated from unfamiliar material at minimum rate of 60 words a minute.

2 Class Hours, 3 Laboratory Hours
Prerequisite: SEC 101 Typewriting or equivalent
or concurrent enrollment in SEC 101 Typewriting

SEC 111 Shorthand and Transcription 4 Credits

Development of a minimum rate of 70 words per minute shorthand speed, dictated from unfamiliar material, with efficient transcription techniques to produce typewritten mailable transcripts. Emphasis on shorthand speed building while integrating the correct usuage of principles of grammar, spelling, punctuation, capitalization, vocabulary, numbers, word division, words often confused.

2 Class Hours, 5 Laboratory Hours
Prerequisites: SEC 110 Shorthand or equivalent
and SEC 101 Typewriting or equivalent

SEC 151 Business Communications 2 Credits

Development of desirable written communication style. Review of basic writing mechanics. Composition of letters of inquiry and reply, claim and adjustment, credit and collection, sales and promotion, application. Memoranda, news releases, short reports, telegrams.

2 Class Hours
Prerequisite: SEC 101 Typewriting or equivalent

SEC 153 Office Communications 3 Credits

Practice in written and oral communication. Review of grammar and basic mechanics of effective writing.

3 Class Hours
Prerequisite: SEC 101 Typewriting or equivalent
and ENG 100 Basic Language Skills

SEC 210 Executive Typewriting 3 Credits

Training in advanced typing techniques. Emphasis on preparing documents for law, insurance, real estate, investment, education. Continuation of typewriting speed building.

2 Class Hours, 2 Laboratory Hours
Prerequisite: SEC 102 Typewriting

SEC 212 Technical Typewriting 3 Credits

Specialized training in understanding the correct procedures in preparing typewritten technical materials. Emphasis on typing equations, formulas, laboratory reports. Continuation of typewriting speed building.

2 Class Hours, 2 Laboratory Hours
Prerequisite: SEC 102 Typewriting

SEC 230 Advanced Shorthand 3 Credits

Development of shorthand speed with the introduction of special shortcuts to increase efficiency. Transcription at the typewriter from notes dictated from unfamiliar material at minimum rate of 80 words per minute. Development of proficiency in production of mailable typewritten transcripts from the student's shorthand notes.

2 Class Hours, 3 Laboratory Hours
Prerequisite: SEC 111 Shorthand and Transcription
and SEC 102 Typewriting

SEC 232 Executive Shorthand 3 Credits

Emphasis on increasing shorthand speeds and improving production of mailable typewritten transcripts through an increased knowledge of basic information and vocabulary from the specialized areas of investment, law, insurance.

2 Class Hours, 3 Laboratory Hours
Prerequisite: SEC 230 Advanced Shorthand
and SEC 102 Typewriting

SEC 234 Engineering Shorthand 3 Credits

Emphasis on increasing shorthand speeds and improving production of mailable typewritten transcripts through an increased knowledge of basic information and vocabulary from the specialized areas of aerospace, life sciences, synthetics, hydrocarbons-petrochemicals, electronics, communications, computer, nucleonics.

2 Class Hours, 3 Laboratory Hours
Prerequisite: SEC 230 Advanced Shorthand
and SEC 102 Typewriting

SEC 240 Office Practice 2 Credits

Practical experience in operation of calculating, duplicating, transcribing machines.

4 Laboratory Hours
Prerequisite: SEC 111 Shorthand and Transcription and SEC 102 Typewriting

SEC 242 Secretarial Procedures 3 Credits

Final preparation for a secretarial career including the steps of the job interview process. Business activities related to the secretarial profession. Word processing, postal and shipping services, telephone procedures, travel arrangements, planning meetings, banking services, application of filing procedures.

3 Class Hours, 1 Laboratory Hour
Prerequisite: SEC 230 Advanced Shorthand and SEC 210 Executive Typewriting or SEC 212 Technical Typewriting

SEC 246 Office Machines 3 Credits

Practical experience in the operation of various typewriters including magnetic keyboard equipment, calculators, mimeo and spirit duplicators, transcribing and dictating equipment.

5 Laboratory Hours
Prerequisite: SEC 101 Typewriting or equivalent

SEC 248 Office Procedures 3 Credits

Analysis of the basic tasks performed by the office employee. How to apply for and secure the office position. Filing systems and procedures, telephone and telegram services, postal information, office supplies and equipment.

3 Class Hours
Prerequisite: SEC 101 Typewriting or equivalent

SEC 260 Directed Secretarial Experience 3 Credits

Secretarial students who have attained 45 net words per minute for five minutes in typewriting and 80 words per minute for five minutes in shorthand may elect the directed secretarial experience course. Students expected to attend one conference per week and work four hours a week in a faculty or administrative office at the college.

1 Class Hour, 4 Laboratory Hours

SEC 264 Machine Transcription 3 Credits

Emphasis on increasing skills in transcribing recorded materials. Continuing development of knowledge of business vocabulary, correct usage of principles of grammar, punctuation, spelling in the machine transcription of business documents.

2 Class Hours, 2 Laboratory Hours
Prerequisite: SEC 111 Shorthand and Transcription and SEC 102 Typewriting

SEC 299 Independent Study 1-4 Credits

Advanced investigation or research in an individual student's major field of study. Under the guidance of a faculty member, the independent study concerns material beyond the scope and depth of the ordinary course offering. Only one independent study course is allowed per semester.

Prerequisite: Approval of faculty member and department chairperson

HEALTH SCIENCES DIVISION

Biological Sciences and Medical Laboratory Technology Dept.

Biology

BIO 111 General Biology I 4 Credits

Principles of evolution and ecology as unifying themes in biology. Evolutionary processes and ecological adaptations illustrated by plant and animal diversity. The community of cellular life processes. Current environmental problems. The laboratory includes field trips and independent studies.

3 Class Hours, 3 Laboratory Hours

BIO 112 General Biology II 4 Credits

Principles of evolution and ecology as unifying themes in biology. The human animal and its systems. Concepts of animal behavior. Classical genetics, current concepts of gene function and human genetics. Organismal growth and development. Current environmental problems. The laboratory includes field trips and independent studies. **3 Class Hours, 3 Laboratory Hours**

BIO 131 Human Biology I 4 Credits

Normal structure (gross and microscopic) and function of the skeletal, muscular and nervous systems. Emphasis on physiology in lectures and on anatomy in laboratory, stressing those aspects which have greatest relevance to the student's curriculum. **3 Class Hours, 2 Laboratory Hors**

BIO 132 Human Biology II 4 Credits

A continuation of BIO 131 Human Biology I covering the circulatory, respiratory, digestive, urinary, reproductive and endocrine systems. Emphasis on physiology in lectures and on anatomy in laboratory, stressing those aspects which have greatest relevance to the student's curriculum.

3 Class Hours, 2 Laboratory Hours
Prerequisite: BIO 131 Human Biology I or permission of instructor

BIO 150 Microbiology I 4 Credits

The biology of the common bacteria and related microorganisms. General microbiology including asepsis, disinfection, sterilization, cultivation, pathogenicity, resistance, identification. **3 Class Hours, 3 Laboratory Hours**

BIO 160 Microbiology 3 Credits

Position of microorganisms in the biological world, as well as their cultivation and identification. Asepsis, disinfection and sterilization. Disease transmission and the human elements in defense. For Medical Office Assistant and Dental Hygiene students. **2 Class Hours, 3 Laboratory Hours**

BIO 200 Ecology of the Everglades 3 Credits

A scientific yet sensitive look at one of the world's rare and endangered wilderness areas. Everglades ecology shall be studied through an extensive 10-day wilderness camping experience during which each student must participate in a minimum of 45 hours of instruction. After completion of the field work, the student shall complete a final paper which will include both essay questions dealing with the basic ecology of the Everglades and a subjective essay dealing with what this wilderness experience has meant to the student. **3 Class Hours**
Prerequisite: A college general biology course and permission of the instructor

BIO 295 Biology Seminar—Current Trends in Biology 1 Credit

Current trends and developments in the biological sciences presented and discussed by students. Each student is expected to present at least one oral report per semester and to take part in the discussions of other reports. Use of recent literature is stressed. Seminar may be taken each semester for a maximum of 2 credits. **1 Class Hour**

Prerequisite: A college general biology course or permission of instructor

Medical Laboratory Technology

MLT 111 Introduction to Clinical Laboratory Methods and Practices 2 Credits

To acquaint the medical laboratory student with the history and scope of clinical laboratory medicine. Responsibility and professional ethics to self, employer, physician and patient. Field trips to clinical laboratory facilities. Basic clinical laboratory procedures and methodologies for urinalysis performed in laboratory sessions. **1 Class Hour, 2 Laboratory Hours**

MLT 112 Hematology 3 Credits

Anatomy and pathophysiology of the blood and hematopoietic tissue. Techniques and procedures for studying and evaluating blood in health and disease. Laboratory work includes specialized hematological techniques and procedures. **2 Class Hours, 4 Laboratory Hours**

Prerequisite: MLT 111 Introduction to Clinical Laboratory Methods and Practices or permission of instructor

MLT 211 Clinical Chemistry I 4 Credits

Principles and methods of analytical clinical chemistry applied to the physiochemical measurements of body function in health and disease. Emphasis on those chemical tests related to excretion, digestion, metabolism and protein synthesis. Laboratory work includes the related chemical tests and specialized analytical instrumentation. **2 Class Hours, 6 Laboratory Hours**

Prerequisite: One year general chemistry and one year biology or permission of instructor

MLT 212 Clinical Chemistry II 4 Credits

A continuation of MLT 211 Clinical Chemistry I. Emphasis on those chemical tests related to liver function, blood gases, pH and electrolyte balance, enzyme, hormones in health and disease. The laboratory work includes the specific related chemical test and specialized analytical instrumentation.

2 Class Hours, 6 Laboratory Hours

Prerequisite: MLT 211 Clinical Chemistry I or permission of instructor

MLT 222 Clinical Physiology 2 Credits

Emphasis on the molecular chemistry of cellular functions in health and disease. Diseases and dysfunctions of cellular and body processes such as respiration, digestion, circulation, metabolism, synthesis and excretion in terms of disordered biochemistry from a case-oriented approach. **2 Class Hours**

Prerequisites: MLT 211 Clinical Chemistry I, BIO 132 Human Biology I or permission of instructor

MLT 232 Blood Banking and Serology 2 Credits

Introduction to blood banking. Blood typing, ABO, Rh, antiglobulin tests, cross-matching, incompatabilities resulting from pregnancies or transfusions. Selected serological diagnostic procedures and principles.

1 Class Hour, 3 Laboratory Hours

Prerequisite: MLT 112 Hematology or permission of instructor

MLT 251 Microbiology II (Diagnostic) 4 Credits

A continuation of BIO 150 Microbiology I. Emphasis on infectious diseases, communicability, diagnosis and identification of causative organisms, including bacteriology and parasitology. **3 Class Hours, 4 Laboratory Hours**

Prerequisite: BIO 150 Microbiology I or permission of instructor

Dental Hygiene Department

DEN 101 Dental Hygiene I 4 Credits

Contemporary practice of dental hygiene and factors affecting such practice. Principles of instrumentation, root planing, polishing in pre-clinical environment. Clinical experience in some of the basic techniques of dental hygiene care, such as oral prophylaxis, care of equipment and dental first aid.

2 Class Hours, 6 Laboratory Hours

DEN 102 Dental Hygiene II 4 Credits

Continuation of DEN 101 Dental Hygiene I. Clinical experience in the theory, techniques, procedures of dental hygiene care. **2 Class Hours, 8 Laboratory Hours**

Prerequisites: DEN 101 Dental Hygiene I and BIO 131 Human Biology I

DEN 103 Oral Anatomy and Physiology 4 Credits

Normal structure and function of the oral cavity (microscopic and gross). Laboratory work to provide experience with traditional approaches to the study of oral anatomy and physiology. **3 Class Hours, 3 Laboratory Hours**

DEN 104 Nutrition 2 Credits

Nutrients necessary for healthy functioning of human beings in various stages of the life cycle—functions, sources, conditions resulting from excessive and inadequate intake of each nutrient. Composition of foods from various plant and animal sources and their use in planning an adequate and balanced diet.

2 Class Hours

Prerequisite: DEN 101 Dental Hygiene I

DEN 106 Clinical Dental Radiography 2 Credits

Nature and behavior of radiation, biological benefits and hazards, maintenance of radiation hygiene, use and care of the X-ray machine. Intraoral and extraoral dental radiographic techniques performed on manikins and patients, film processing and mounting, radiographic interpretation.

1 Class Hour, 2 Laboratory Hours

Prerequisites: DEN 101 Dental Hygiene I and DEN 103 Oral Anatomy and Physiology

DEN 201 Dental Hygiene III 7 Credits

Continuation of DEN 102 Dental Hygiene II. Integration of theory with clinical experience in various oral hygiene preventive procedures, selected expanded duties and essential business aspects of a dental office.

4 Class Hours, 12 Laboratory Hours

Prerequisite: DEN 102 Dental Hygiene II, DEN 104 Nutrition, DEN 106 Clinical Dental Radiography, BIO 160 Microbiology and CHM 126 Chemistry

DEN 202 Dental Hygiene IV 5 Credits

Continuation of DEN 201 Dental Hygiene III. Clinical experience in all phases of dental hygiene care. Emphasis on planning and execution of the total treatment plan concept. **2 Class Hours, 12 Laboratory Hours**

Prerequisites: DEN 201 Dental Hygiene III, DEN 204 General and Oral Pathology and DEN 205 Periodontology

DEN 204 General and Oral Pathology 3 Credits

Broad picture of the disease process through the study of common general diseases, their causes, results and treatment. Emphasis on the principles of inflammation, healing and repair, oral diseases, their causes, recognition and treatment. **3 Class Hours**

Prerequisite: DEN 102 Dental Hygiene II, DEN 104 Nutrition, BIO 160 Microbiology and BIO 132 Human Biology II

DEN 205 Periodontology 2 Credits

Pathology of the periodontium. Emphasis on recognition and treatment of the periodontal patient within the scope of the dental hygienist. **2 Class Hours**

Prerequisites: DEN 102 Dental Hygiene II, DEN 103 Oral Anatomy and Physiology, DEN 106 Clinical Dental Radiography, BIO 132 Human Biology II and BIO 160 Microbiology

DEN 206 Dental Pharmacology 2 Credits

Pharmacology as it affects the clinical practice of dental hygiene and dentistry. Drugs commonly used in dentistry and correct methods for their use. Emphasis on pharmacological aspects of anesthesia. **2 Class Hours**

Prerequisite: BIO 132 Human Biology II and BIO 160 Microbiology

DEN 210 Dental Materials 3 Credits

Composition, chemical and physical properties and use of materials used in the dental laboratory and operatory. Laboratory sessions will provide experience in performing common dental laboratory procedures and background for clinical application of expanded functions. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: DEN 201 Dental Hygiene III

DEN 212 Public Health 2 Credits

Principal responsibilities and functions of public health. Tools for measuring a population's needs and demands and how they are met. Community public and dental health agencies and programs. Research relating to dental diseases. Roles and opportunities for dental hygiene in public health. A special project, on-campus or off, must be completed. **2 Class Hours**

DEN 214 Dental Specialties 2 Credits

Integration, comparison and study of all the special fields of dentistry including endodontics, periodontics, oral surgery, public health, prostodontics, pedodontics and orthodontics. **2 Class Hours**

Prerequisite: DEN 201 Dental Hygiene III

Medical Office Assistant

MOA 101 Medical Assisting Science 1 Credit

Introduction to medical specialties and problems with related vocations. Responsibility of medical assistant to self, physician and patient. Principles of professional ethics. Professional affiliation. Field trips. **2 Laboratory Hours**

MOA 111 Medical Assisting Procedures 3 Credits

Clinical procedures of medical assisting in the physician's office. Use and management of diagnostic instruments and equipment. Related patient care, professional ethics and nomenclature. For Medical Office Assistant students.

2 Class Hours, 2 Laboratory Hours

Prerequisite: MRT 105 Medical Terminology or consent of instructor.

MOA 112 Standard First Aid and Personal Safety and Cardio-Pulmonary Resuscitation 1 Credit

First aid skills for treatment of shock, burns, poisoning and control of bleeding. The cardio-pulmonary resuscitation segment prepares the student to recognize, evaluate and initiate care for victims of a cardiac arrest. Certification from the American Red Cross and American Heart Association is given upon successful completion of the course. **2 Laboratory Hours**

MOA 201 Medical Assisting Procedures 4 Credits

Laboratory introduction to microscopic analysis of blood and urine. Also simple blood chemistry tests in medical office. Study of formation of blood cells and urine. For Medical Office Assistant students.
2 Class Hours, 4 Laboratory Hours

MOA 206 Medical Office Management 4 Credits

Medical office administrative procedures, such as accounting principles and practices, patient health records, insurance forms, banking and postal services, payroll records, patient fees and ledger cards, office machines. Mechanics of applicable medical correspondence including letters, manuscripts. Emphasis on letters of inquiry and replay, claims and adjustment, credit and collection. For Medical Office Assistant students. **3 Class Hours, 3 Laboratory Hours**

MOA 210 Pharmacology 2 Credits

A practical course relevant to medical curriculums. Emphasizes knowledge of prescriptions and prescription writing. Basic principles of mathematics of pharmacy. Drugs governed by U.S.P. standards which are in common use and their generic-pharmaceutical relationship. Drug grouping and action relevant to human physiology. For Medical Office Assistant and Medical Record Technology students **2 Class Hours**
Prerequisite: BIO 132 Human Biology II

MOA 211 Medical Assisting Procedures 4 Credits

Advanced technical procedures in medical assisting specifically oriented to the various medical specialties. Techniques of electrocardiography, audiometry and physical therapy. Field trips and practical experiences. For Medical Office Assistant students. **2 Class Hours, 4 Laboratory Hours**
Prerequisite: MOA 201 Medical Assisting Procedures

MOA 244 Directed Practice 4 Credits

Directed practical experience in the physicians' offices, medical centers, school health departments, rehabilitation clinics, and other health care institutions. For Medical Assistant students. **16 Laboratory Hours**
Prerequisite: MOA 110 Medical Assisting Procedures
and MOA 201 Medical Assisting Procedures

Medical Record Technology

MRT 101 Medical Record Science 3 Credits

Introduction to the historical development of the health care field and to the medical record department with an overview of the medical record professional association. Numbering and filing systems and methods. Storage and retrieval systems. Definitions of, standards for, and development of a medical record as to content, format, evaluation and completion.
2 Class Hours, 2 Laboratory Hours

MRT 105 Medical Terminology 2 Credits

Medical terminology as correlated with anatomical systems. Suffixes, prefixes and use of the medical dictionaries. For Medical Office Assistant and Medical Record Technology students. **2 Class Hours**

MRT 106 Terms and Transcription 4 Credits

Continuation of MRT 105 Medical Terminology. Introduction to typing of medical reports and correspondence. Use of dictionaries and reference books. Introduction to filing and preserving records for Medical Office Assistant students. Medical Record Technology students also take this course.

2 Class Hours, 4 Laboratory Hours
Prerequisite: MRT 105 Medical Terminology
and/or permission of instructor

MRT 110 Medical Record Science 4 Credits

Hospital statistics, sources, definitions, collection, reporting and presentation of data. Purposes of classifying diseases and operations, difference between and historical development of nomenclature and classification systems. Value and use of indexes and registers including the Tumor Registry.

2 Class Hours, 4 Laboratory Hours
Prerequisite: MRT 101 Medical Record Science

MRT 144 Directed Practice

Directed summer practical experience in the hospital medical record department. Development of insight and skills into the basic medical record procedures. Graduation requirement. **40 Laboratory Hours per week for 4 weeks**
Prerequisite: MRT 110 Medical Record Science
and MRT 106 Terms and Transcription

MRT 201 Medical Record Science 4 Credits

Importance of the medical record as a legal document. A comprehensive review of the organization of the medical staff, primarily within the hospital. Background and medical record keeping in long term care facilities. Certification by accrediting and governmental agencies.

2 Class Hours, 4 Laboratory Hours
Prerequisite: MRT 110 Medical Record Science

MRT 207 Advanced Medical Transcription 3 Credits

Review of medical terminology emphasizing specialized terminology. Advanced medical transcription techniques through the use of recorded history and physical examinations, discharge summaries, consultation reports, operative reports and outpatient notes. **1 Class Hour, 3 Laboratory Hours**
Prerequisite: MRT 106 Terms and Transcription

MRT 210 Medical Record Science 4 Credits

Introduction to the history of medicine. Ambulatory health care and its implications on medical record practice. Retrospective medical auditing. Principles of management and the role of the supervisor in management of a medical record department. **2 Class Hours, 4 Laboratory Hours**
Prerequisite: MRT 201 Medical Record Science

MRT 244 Directed Practice

Directed practice experience in the hospital and related affiliation sites. Correlated with MRT 210 Medical Record Science to develop insight and skills into advanced medical record procedures. This is a 7½ week course.

40 Laboratory Hours per week for 3 weeks
Prerequisite: MRT 201 Medical Record Science
and MRT 144 Directed Practice

MRT 245 Directed Practice 3 Credits

Directed practice experience in the hospital and related affiliation sites. Correlated with MRT 210 Medical Record Science to develop insight and skills into advanced medical record procedures. This is a 7H week course.

16 Laboratory·Hours
Prerequisite: MRT 201 Medical Record Science
and MRT 244 Directed Practice

MRT 295 Medical Record Seminar 2 Credits

Detailed study and analysis of specific problems encountered in the administration of a Medical Record Department. Correlated with directed clinical practice. Case study and extensive literature review. **2 Class Hours**

Nursing Dept.

ADN 100 Meeting Basic Human Needs 7 Credits

Introduction to nursing concepts. The total human being incorporating biophysiological and psychosocial components. Emphasis on maintaining homeostasis within the illness/wellness continuum. The needs approach, based on Maslow's Hierarchy of Human Needs, emphasizing physiological and safety needs. Skills in providing safe bedside nursing care, such as simple treatments, pharmacology and basic nutrition. Integrating knowledge of communication skills, assessment and problem-solving, mental mechanisms, normal responses to stress, body responses to pathology, emergency intervention for injuries.

5 Class Hours, 6 Laboratory Hours

ADN 101 Nursing Care During the Life Cycle 7 Credits

The Life Cycle from conception to death. Correlating basic human needs and the developmental tasks in each age group. The family cycle, as one of the tasks of the young adult. Emphasis on preparation for parenthood, the experience of parenthood, and the phychosocial implications of the young family. Learning principles identified and incorporated into the nursing process. Situational and maturational crises as normal aspects of the life cycle. Adaptation of nursing intervention directed toward meeting basic needs of the chronically ill, the aging and those individuals facing death. **5 Class Hours, 6 Laboratory Hours**

Prerequisite: ADN 100 Meeting Basic Human Needs

ADN 200 Nursing Process I 10 Credits

The nursing process as it meets the needs of individuals experiencing physiological and/or psychological stress. Problems of mental and emotional illness, of mobility, of inflammation. In-depth approach to methods of maintaining a therapeutic environment. Emphasis on the rehabilitation of individuals utilizing community facilities. Appropriate clinical experience and field trips.

6 Class Hours, 12 Laboratory Hours

Prerequisites: ADN 101 Nursing Care During the Life Cycle and BIO 132 Human Biology II

ADN 201 Nursing Process II 10 Credits

The nursing process as it meets the needs of individuals with complex physiological and/or psychological stress. Continuation of problems of mental and emotional illness, of oxygenation and metabolism, of obstruction. Continued emphasis on developing long range plans to return individuals to the community through rehabilitation, utilizing available facilities. Appropriate clinical experiences and field trips. **6 Class Hours, 12 Laboratory Hours**

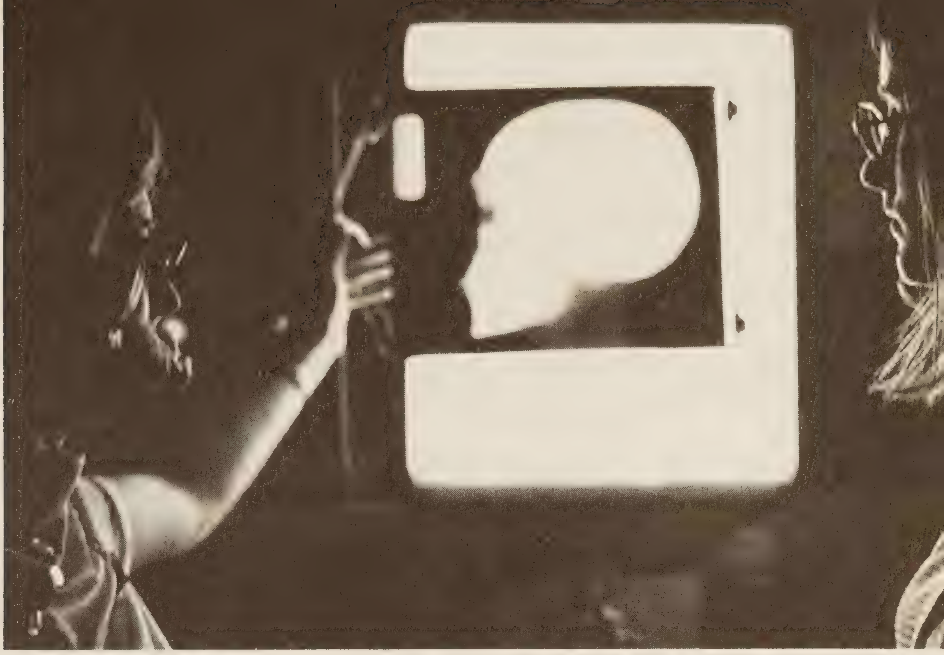
Prerequisite: ADN 200 Nursing Process I

ADN 295 Nursing Seminar 2 Credits

Broad survey course examining the effects of a changing society upon the delivery of health care. Topics to be chosen by the students and presented by them. The National League for Nursing Achievement exams are a guide for individual's further study before taking the New York State Board test pool for registration.

2 Class Hours

Prerequisite: ADN 200 Nursing Process I



Radiologic Technology students viewing a radiograph in the College's dark room.

Radiologic Technology Dept.

RAD 100 Introduction to Radiologic Technology 1 Credit

Introduction and orientation to the radiologic technology profession. (Half semester) **2 Class Hours**

RAD 101 Principles of Radiologic Technology I 3 Credits

Individual modules including radiation protection, recording media, film processing, radiographic quality, radiographic accessories and the composition and use of contrast media. **3 Class Hours, 1 Laboratory Hour**

RAD 102 Principles of Radiologic Technology II 3 Credits

A modular approach to radiological mathematics, advanced study of radiographic quality, preparation of technique charts, sensitometry, radiographic equipment calibration and portable radiography. **3 Class Hours**

Prerequisite: RAD 101 Principles of Radiologic Technology I or permission of instructor

RAD 111 Ethics and the Nursing Process 2 Credits

The professional conduct of the radiologic technologist and related patient care procedures routinely used in the department of radiology. Understanding basic medical terminology, with emphasis on radiographic consultations.

1 Class Hour, 2 Laboratory Hours

RAD 130 Directed Practice 3 Credits

Instruction and practice in radiographic positioning of the appendicular skeleton, chest and abdomen, with related practical application in an affiliated hospital. **18 Laboratory Hours**

RAD 131 Extended Campus Laboratory (Winterim)

Winterim clinical assignment devoted to observation and application of elementary radiographic procedures under direct supervision in a cooperating hospital. (Graduation Requirement) **Total of 80 Laboratory Hours**

Prerequisite: RAD 130 Directed Practice

RAD 132 Directed Practice 4 Credits

Instruction and practice in radiographic positioning of the axial skeleton, with related practical application in an affiliated hospital. **18 Laboratory Hours**

Prerequisite: RAD 131 Extended Campus Laboratory

RAD 133 Summer Extended Campus Laboratory

Summer practice in radiographic positioning and technique at an assigned hospital to qualify for State Licensing and American Registry Examinations. A graduation requirement. **Prerequisite: RAD 132 Directed Practice**

RAD 210 Principles of Radiologic Physics 4 Credits

Principles of the construction and function of radiographic equipment; trouble-shooting and preventative maintenance. **4 Class Hours**

Prerequisite: PHY 116 Physics or permission of instructor

RAD 215 Nuclear Medicine and Radiation Therapy 1 Credit

Basic concepts and principles related to the use of radiopharmaceuticals and therapeutic radiation in medicine. **1 Class Hour**

Prerequisite: PHY 116 Physics or permission of instructor

RAD 220 Introduction to Radiological Pathology 2 Credits

Medical and surgical diseases and their relationship to radiographic procedures. **2 Class Hours**

RAD 225 Introduction to Special Radiographic Procedures 4 Credits

Introduction to radiographic examinations involving surgical procedures and specialized equipment. **3 Class Hours, 2 Laboratory Hours**

Prerequisite: RAD 230 Directed Practice and BIO 132 Human Biology II or permission of instructor

RAD 230 Directed Practice 4 Credits

Instruction and practice in advanced positioning techniques of the skull and facial bones, including intraoral radiography with related practical application in an affiliated hospital. **18 Laboratory Hours**

Prerequisite: RAD 133 Summer Extended Campus Laboratory or permission of instructor

RAD 231 Extended Campus Laboratory (Winterim)

Winterim clinical assignment devoted to the application of radiographic procedures under direct supervision in a cooperating hospital. A graduation requirement. **Total of 80 Laboratory Hours**

RAD 232 Directed Practice 3 Credits

Application of advanced radiographic procedures under direct supervision in an affiliated hospital. **16 Laboratory Hours**

RAD 233 Summer Extended Campus Laboratory

Summer practice in advanced radiographic positioning and technique at an assigned hospital to qualify for State Licensing and American Registry Examinations. A graduation requirement.

Prerequisite: RAD 232 Directed Practice or permission of instructor

RAD 240 Radiation Health 2 Credits

Biomedical aspects of the effects of ionizing radiation together with general and specialized techniques used for protection of patients and personnel. Federal and state regulations and guidelines for radiation installations.

2 Class Hours, 1 Laboratory Hour

Prerequisite: RAD 210 Principles of Radiologic Physics or permission of instructor

RAD 295 Seminar in Radiography 2 Credits

Preparation of the technical report and its organization for both written and oral presentation. Readings in current literature and journals. Occasional guest lecturers.
2 Class Hours
Prerequisite: Senior Year Status

LIBERAL ARTS AND SCIENCES DIVISION

English Dept.

ENG 100 Basic Language Skills 3 Credits

Writing workshops designed to improve a student's mastery of composition skills, including patterns of sentence structure and the recognition and correction of common errors in grammar and usage.
3 Class Hours

ENG 105 English as a Second Language 3 Credits

A study of the English language primarily for the foreign born student with some knowledge of English. The student will be expected to spend more than three hours a week in some type of writing workshop if his or her familiarity with the language demands it. Course expectations are the same as those for ENG 100 Basic Language Skills.
3 Class Hours Minimum

ENG 110 Written Expression I 3 Credits

The nature of language and its effect on social behavior, including analysis of various types of communication to stimulate critical thinking and verbal analysis. Study and practice in the composition of ideas and information, including paragraph development, unity, coherence, style. Familiarization and practice with research procedures.
3 Class Hours

ENG 120 Written Expression II 3 Credits

Further critical and evaluative writing based on an analysis of the forms and themes of various literary types: myth and folklore, poetry, prose, drama.
3 Class Hours
Prerequisite: ENG 110 Written Expression I or permission of instructor

ENG 150 Technical Writing 3 Credits

Course designed to discuss the principles and to practice the type of writing to be eventually required of students in technology programs as part of their professional duties. Emphasis on analysis and preparation of reports, articles and technical correspondence.
3 Class Hours
Prerequisite: ENG 100 Basic Language Skills or ENG 105 English as a Second Language or ENG 110 Written Expression I

ENG 160 Journalism 3 Credits

Introductory course in journalistic writing and publication practices utilizing student publications for workshop situations. Designed primarily for editors and staff members of the campus newspaper. (Liberal Arts students may not use this course to fulfill composition or literature requirements.)
3 Class Hours
Prerequisite: ENG 100 Basic Language Skills or ENG 105 English as a Second Language or ENG 110 Written Expression I

ENG 200 Media and Culture **3 Credits**

A critical examination of the mechanisms and influences of radio, television and film media on the individual and on society. Exposure to culturally important media works and to some of the important commentators on these works. (Liberal Arts students may not use this course to fulfill composition or literature requirements). **3 Class Hours**

ENG 299 Independent Study: English **3 Credits**

An individual student project concerned with advanced work in a specific area of language or literature. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course. **Prerequisite: One semester of college level work**

Literature

The Department of English recommends that students complete a composition program before taking literature courses.

LIT 210 Studies in United Stats Literature I **3 Credits**

History and development of United States literature from colonial period to late 19th century. Emphasis on several major writers of the period. **3 Class Hours**

LIT 211 Studies in United States Literature II **3 Credits**

History and development of United States literature from late 19th century to the present. Emphasis on several major writers of the period. **3 Class Hours**

LIT 214 Studies in British Literature I **3 Credits**

History and development of British literature from the Middle Ages to the 18th century. Selections of literary merit from prose, drama, poetry. **3 Class Hours**

LIT 215 Studies in British Literature II **3 Credits**

History and development of British literature from the beginning of the 18th century to the middle of the 20th. **3 Class Hours**

LIT 220 The World of the Short Story **3 Credits**

An examination of the development of American, British and Continental short stories. Emphasis on theme and structure. **3 Class Hours**

LIT 230 American Drama **3 Credits**

Studies in dramatic theories, techniques and thematic problems of the American drama. (Students taking this course may also be interested in THR 101 Fine Arts: Introduction to Theatre and THR 111 Acting). **3 Class Hours**

LIT 233 World Drama **3 Credits**

Studies in dramatic theories, techniques and thematic relationships of the world drama. (Students taking this course may also be interested in THR 101 Fine Arts: Introduction to Theatre and THR 111 Acting). **3 Class Hours**

LIT 235 The Tragic and Comic Vision of Shakespeare 3 Credits

Shakespeare as both dramatist and poet. Emphasis on selected comedies, histories, tragedies. (Students taking this course may also be interested in THR 101 Fine Arts: Introduction to Theatre and THR 111 Acting.) **3 Class Hours**

LIT 240 The Poetic Experience: Sight and Sound 3 Credits

An exploration of the different modes and moods of poetic expression. A thematic and structural approach to poetry as a total experience. **3 Class Hours**

LIT 250 Portraits of Women: Search for Understanding 3 Credits

An in-depth examination of what it means to be a woman as presented by representative literary artists, both women and men, in critically acclaimed pieces of literature. Emphasis on 19th and 20th century material. **3 Class Hours**

Instructor and his students take advantage of nice weather to hold a class outdoors.

LIT 253 Psychological Investigation in Literature 3 Credits

The application of Jungian, Freudian and other psychological theories and insights to selected short stories, novels, and poems to promote more penetrating appreciation of characters' motivations and actions and the literary work in general. **3 Class Hours**

LIT 255 Modern Existential Literature 3 Credits

An investigation of the themes of alienation and the absurd in selected prose and poetry to shed light on man's current existential crisis. **3 Class Hours**

LIT 257 Heritage of Modern Literature 3 Credits

An attempt to define modern literature as an embodiment and development of antique themes and traditions through the comparative study of the epic, the novel and related genre. **3 Class Hours**

LIT 260 Detective Fiction 3 Credits

A critical study of one of the most popular literary forms of our time designed for armchair detectives. Starting with Poe, Conan Doyle (Sherlock Holmes) and other classics in the field, the course traces the development of the detective story from its puzzle-solving beginnings to the modern psychological novel of crime and detection. **3 Class Hours**

LIT 263 Children's Literature 3 Credits

Children's literature with introduction to the variety of books available today and development of standards for evaluating them. Prime concern is to help the student use literature with children creatively, recognizing the importance of language arts, communication and listening skills in cognitive development.

3 Class Hours

LIT 265 Biblical Literature 3 Credits

An acquisition of the skills necessary to study the Bible. Emphasis on the Biblical narrative and its relationship to Western culture through reading and analysis. **3 Class Hours**

Reading and Study Skills

RDG 100 Individualized Reading and Study Development 1 Credit

Basic reading skills and study technique in terms of the needs of particular students. Diagnosis to determine strengths and weaknesses in reading and study skills precede the organization of the student's individual program.

3 Class Hours

RDG 200 Speed Reading 1 Credit

Theories of speed reading coupled with extensive practice in developing a greater range in effective reading rate. Emphasis on adjusting rate and comprehension to the type and level of material. Use of reading accelerators, controlled reading, tapes. **1 Class Hour, 1-3 Laboratory Hours**

History and Political Science Dept.

History

HIS 120 Development of Western Civilization 3 Credits

Development of the Western tradition from the dawn of history through the classical civilizations of Greece and Rome, Middle Ages, Renaissance and Reformation. Focus on those ideas and institutions from the past which continue to influence modern times. **3 Class Hours**

HIS 121 Development of Western Civilization 3 Credits

Growth and evolution of the Western tradition from the Age of Royal Absolutism to the present. Stress on the chief political, economic, military and intellectual developments since 1500 that have shaped contemporary world civilization. **3 Class Hours**

HIS 130 United States History I 3 Credits

The United States from 1607 to 1898. The colonies, Revolution, Constitution, early national period, Age of Jackson, expansion, Civil War and Reconstruction, the West, and the Gilded Age. Survey of political, economic, cultural developments through the 19th century. **3 Class Hours**

HIS 131 United States History II 3 Credits

The United States from 1898 to the present. The American Empire, progressive reforms, World War I, the Twenties, Depression, New Deal, World War II and the Cold War, post-war domestic issues. **3 Class Hours**

HIS 140 History of Latin America I 3 Credits

History of Latin America from the Age of Discovery and Conquest through the 19th century, 1492 to 1890. Indian cultures of Central and South America (Aztec, Inca, Maya), Spanish conquistadors (Cortes, Pizarro), Portuguese adventurers, impostion of European rule, Independence Wars, national identities, rise of the masses. Story of economic oppression, political authoritarianism, cultural vitality, and triumph over despair. **3 Class Hours**

HIS 141 History of Latin America II 3 Credits

History of Latin America from the 1890's to the present, emphasizing the causes of political instability and economic backwardness. Close analyses of reform, reactionary and revolutionary movements in modern Latin America and of inter-American affairs. **3 Class Hours**

HIS 150 Russian and East European History I 3 Credits

Survey of Slavic history from early settlement in Kievan Russia and Eastern Europe, Mongol and Turkish conquests, rise of Muscovy and House of Hapsburg, reigns of Peter I and Catherine II, fate of Poland, Ottoman Empire in Europe and other significant topics to the end of the Crimean War. **3 Class Hours**

HIS 151 Russian and East European History II 3 Credits

From the latter half of the 19th Century including the gradual transition to modernity, imperialism of Russia, Austria and the Ottomans, rise of Balkan nationalism, the Dual Monarchy of Austria-Hungary, revolutions, World Wars I and II, Soviet hegemony and contemporary issues. **3 Class Hours**

HIS 160 Traditional China and Japan 3 Credits

Investigation of the origins of Chinese and Japanese civilizations, emphasizing the influences of culture, geography, religion. Contrast with early Western development to establish the "unique mood" of pre-modern Asian society. Chronological coverage of the major historical eras. **3 Class Hours**

HIS 161 Modern China and Japan 3 Credits

Investigation and analysis of the history of modern China and Japan in the 19th and 20th Centuries. Emphasis on events and changes in East Asia since the end of World War II. The increasing importance of China and Japan to the stability of the modern world. Major cultural developments as they serve to illuminate the behavior of modern East Asians. **3 Class Hours**

HIS 210-280 Special Topics in History

Additional history courses are available beside those listed here in the College Catalog. For information, consult the department brochure and class schedule.

HIS 210 Utopia: The History of Perfect Societies 3 Credits

Examines the relationship between the "real" and the "ideal" — among individuals; within the organization, aims, and performance of societies; and in fictional and actual utopian communities. Comparisons of utopian thought of the classical, medieval and modern periods, from the Christian Brotherhood to the contemporary commune. To these ends the writings of Plato, More, Condorcet, Owen, Saint-Simon, Fourier, Marx, Wells, Huxley, Teihard de Chardin, Wagar and Clarke are studied. **3 Class Hours**

HIS 225 Total War in the Twentieth Century 3 Credits

Causes of war in the contemporary world, concentrating on World War II. Review of the settlement of World War I and the events of the inter-war period that led to World War II. The course of the war and the failure of the victors to create a settlement of peace in the world.

3 Class Hours

Prerequisite: HIS 121 Development of Western Civilization or permission of instructor

HIS 227 Woman as a Force in History 3 Credits

Women's contributions to the evolution of Western institutions. Exploration of the origins of myths about women, women's roles in modern society, evolution of modern feminism. **3 Class Hours**

HIS 233 Twentieth Century United States Social History 3 Credits

Historical currents of social change and social reform in the 20th Century from the latter part of the 19th Century to the "Great Society." Reformist themes bearing on health, welfare, civil rights, labor and women's suffrage against the backdrop of hostile and supportive private groups. Creation of public institutions to meet human needs (the U.S. Public Health Service, the Social Security Administration), the response of the courts to organized reformist pressure, and social needs still unmet. For students in health-related and human services career programs.

3 Class Hours

HIS 235 History of Twentieth Century United States Foreign Policy 3 Credits

American foreign policy has historically been forged in an arena of conflict over practical and philosophic issues, between, for example, a "need for secrecy" and democratic pressures for publicity and "openness." This problem, identified in 1835 by a shrewd French observer, Alexis de Tocqueville, persists today. It provides an excellent starting point for an in-depth investigation of U.S. foreign policy in the 20th Century.

3 Class Hours

Prerequisite: HIS 131 United States History II is recommended

HIS 299 Independent Study 1-3 Credits

An independent student project which is beyond the scope of courses currently offered by the department, directed by a faculty member with approval of the department chairman. Independent study does not satisfy the Liberal Arts requirement in history, and it may not be taken in lieu of a 100-series course.

Prerequisite: 3 semester hours in 100-series history courses

Political Science

POS 201 The American Political System 3 Credits

American political institution, processes and behavior. The relationships among cultural, legal and social aspects of the political system. Structure, organization and function of political parties, pressure groups and mass media. Application to contemporary issues and events. **3 Class Hours**

POS 202 Comparative Political Systems 3 Credits

A comparative analysis of representative political systems, their major institutions, processes and policy problems. Governments and their policies in democratic, authoritarian, totalitarian and modernizing political systems. **3 Class Hours**

POS 203 International Relations 3 Credits

Basic concepts and principles of world politics. International conflict resolution, international organizations, the struggle for power. Factors affecting the relationships among the major powers. Role of diplomacy, alliances, war and peace in the world arena. **3 Class Hours**

POS 204 American State and Local Government 3 Credits

Theory and practice of state and local government, utilizing a problem-solving or "policy" approach. Students are encouraged to explore in depth the workings of city and county governments locally. **3 Class Hours**

POS 299 Independent Study 1-3 Credits

An independent student project which is beyond the scope of courses currently offered by the department, directed by a faculty member with approval of the department chairman. **Prerequisite: 3 semester hours of political science**

Humanities Dept.

Art

ART 101 Fine Arts: Introduction to Art 3 Credits

Basic art principles and concepts together with their historical development as shown in representative works of painting, sculpture and architecture. Gallery visits. **3 Class Hours**

ART 110, 111 Studio Art 3, 3 Credits

Basic drawing skills as a foundation for studio work, including black and white media and color, using a variety of media, and ultimately leading into oils, acrylics and water color painting. Composition, color, sketching from life and nature, emphasizing a creative approach to subject matter. **6 Studio Hours each**

Prerequisite: ART 110 Studio Art for ART 111

ART 120 Sculpture Fundamentals 3 Credits

Abstract elements of sculptural form as revealed through analysis of student work and historical examples. Emphasis on developing the student's ability to utilize concepts in practice and to expand his understanding of the general function of form as symbolic structure. **6 Studio Hours**

ART 201 The Meaning of Modern Art 3 Credits

An in-depth survey of the major movements and masters from the late 19th century up to the present day. Major focus on the character of modern imagery and its genesis in the intellectual and spiritual condition of modern man.

3 Class Hours

ART 220 Life Sculpture 3 Credits

The principles of abstract form applied to the human body, and the expressive possibilities of the human figure explored. Studies of actual models in oil-base clay later to be cast into plaster or carved in wood or stone. **6 Studio Hours**

ART 299 Independent Study: Art 1-3 Credits

An individual student project concerned with advanced work in a specific area of art. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in art

Music

MUS 101 Fine Arts: Introduction to Music 3 Credits

Basic elements of music common to all forms of musical expression. Emphasis on developing listening habits, which bring the student to an informed awareness and understanding of music. Attendance at concerts and recitals.

3 Class Hours

Student at work on an assignment in the College's Art Studio.

MUS 105 Music Theory I 3 Credits

A beginning course in music theory, including basic rudiments of music. Pitch and rhythmic notation, scales and intervals. Ear training through melodic and rhythmic drills and dictation. **3 Class Hours**

MUS 106 Music Theory II 3 Credits

Continuation of Music Theory I. Traditional harmony, exercises in melodic, rhythmic and harmonic dictation, aural analysis, beginning composition.
3 Class Hours
Prerequisite: MUS 105 Music Theory I or consent of instructor

MUS 110 17th and 18th Century Music 3 Credits

Music and musical styles of the 17th and 18th Centuries. Emphasis on the composers and their styles and the relationship of music to the social, political and other cultural reforms of the period. **3 Class Hours**
Prerequisite: MUS 101 Introduction to Music or consent of instructor

MUS 111 19th Century Music 3 Credits

Important musicians and musical styles of the Romantic Period. Emphasis on developments in piano literature, the symphony orchestra and opera. Listening to selected recordings and attendance at local concerts. **3 Class Hours**
Prerequisite: MUS 101 Introduction to Music or consent of instructor

MUS 112 20th Century Music 3 Credits

Important musicians and musical styles in the 20th Century. Emphasis on the trends and development of music in America. Leading European composers.
3 Class Hours
Prerequisite: MUS 101 Introduction to Music or consent of instructor

MUS 190 The College Choir 1 Credit

Students who sing in the College Choir receive one credit per semester. See page 24.

MUS 191 Instrumental Musical Association 1 Credit

Students who play in the musical groups sponsored by the Instrumental Music Association receive one credit per semester. See page 24.

MUS 299 Independent Study: Music 1-3 Credits

An individual student project concerned with advanced work in a specific area of music. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.
Prerequisite: 3 semester hours of college level work in music

Theater

THR 101 Fine Arts: Introduction to Theater 3 Credits

Art of the theater to increase understanding and appreciation of drama. A cultural approach considering the interrelationship of all aspects of production including plays, acting, directing, costume, make-up and lighting. Attendance at local productions. (Students taking this course may also be interested in LIT 230 American Drama, LIT 233 World Drama, LIT 235 The Tragic and Comic Version of Shakespeare). **3 Class Hours**

THR 109, 110 Practicum in Theater Design and Technology 3 Credits

Stage design (both lighting and scenic) and construction techniques are studied first hand, as students participate in actual production of two plays each semester. Problems encountered during a production are analyzed. Individualized instruction is increased as students begin to focus on their particular areas of interest. **3 Class hours**

Prerequisite: THR 101 Introduction to Theater or consent of instructor

THR 111 Acting 3 Credits

Fundamental acting techniques. Development of individual skills and disciplines relative to external acting techniques. Use of face, voice and movement.

3 Class Hours

THR 112 Acting 3 Credits

Intensive application of acting techniques through scene study and performance. Problems of character analysis, internal acting and style.

3 Class Hours

THR 190 Broome Community College Theater 1 Credit

Students who participate in the plays and performances of the BCC Theater Co. receive one credit per semester. See page 25.

THR 201, 202 Children's Theater 3,3 Credits

Design and construction of costumes, sets and properties for touring children's production. Study and analysis of children-oriented plays. Performance at community elementary schools and organizations. **3 Class Hours each**

THR 221 History of the Theater I 3 Credits

History of stage production with emphasis on theater as a performing art. Chronological examination of theater activity as a mirror of social and cultural experience from primitive times through the Renaissance. **3 Class Hours**

Prerequisite: THR 101 Introduction to Theater of permission of instructor

THR 222 History of the Theater II 3 Credits

History of stage production from the 18th century to the present, with attention to the contribution of literature and the fine arts to stage development.

3 Class Hours

Prerequisite: THR 101 Introduction to Theater or permission of instructor

THR 299 Independent Study: Theater 1-3 Credits

An individual student project concerned with advanced work in a specific area of theater. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in theater

Speech

SPK 101, 102 Effective Speaking 2,3 Credits

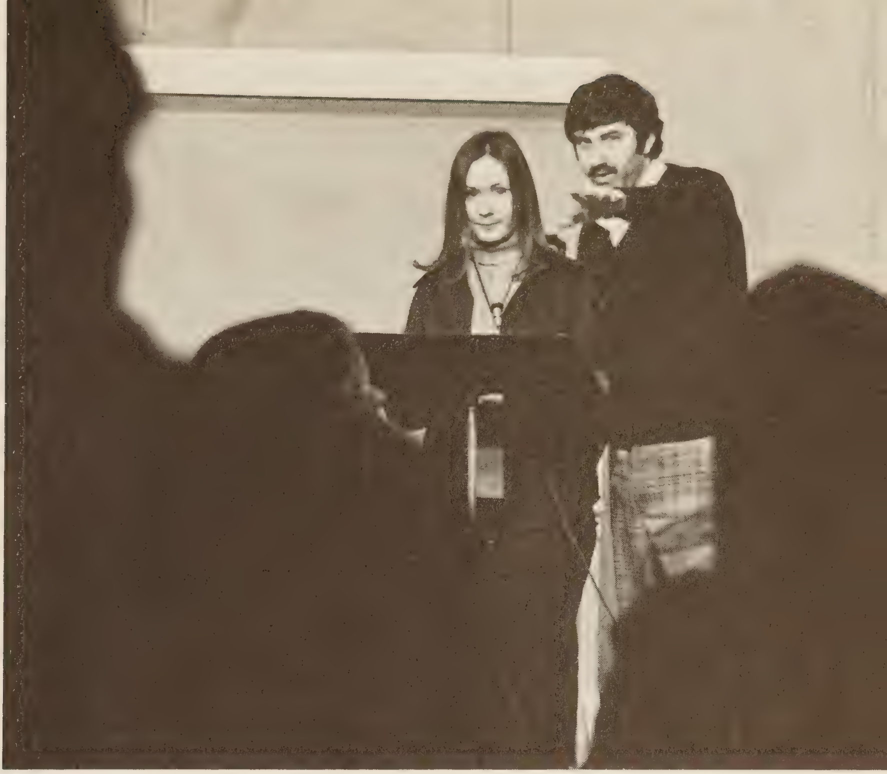
Speech communication through voice, words and action. Voice production, diction, platform presence. Organization of ideas. Practice in presenting speeches of different types.

2 Class Hours for SPK 101, 3 Class Hours for SPK 102

SPK 299 Independent Study: Speech 1-3 Credits

An individual student project concerned with advanced work in a specific area of speech. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in speech



Instructor makes a point to a student during a speech class.

Interdisciplinary

HUM 201 The Concept of Man: Naturalism and Evolutionary Thought 3 Credits

An interdisciplinary course exposing the student to a broad spectrum of materials: drama, film, fiction and the arts, as well as expository anthropological and biological writing dealing with man's rediscovery of his "animality" and its effects on his self-concept. Focusing on the years 1850 to the present, the student will read such authors as Freud, Marx, Darwin, Crane, Dreiser, Zola, Morris, Lorenz and Shockley. Completion of a guided independent research project in an area of the student's interest is required. **3 Class Hours**

French

FRE 101, 102 Beginning French 4,4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours, 1 Laboratory Hour each
Prerequisite: FRE 101 Beginning French for FRE 102

FRE 201 Intermediate French I 3 Credits

Intensive review of grammar and syntax and oral practice in classroom and audio-lingual laboratory. Reading and discussion of works selected by the instructor. **3 Class Hours, 1 Laboratory Hour**

Prerequisite: FRE 102 Beginning French

FRE 202 Intermediate French II 3 Credits

Reading of literary works of recognized authors. Continuation of grammar, syntax and oral practices in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour

Prerequisite: FRE 201 Intermediate French I

FRE 203 Masterpieces of French Prose and Poetry I 3 Credits

The Middle Ages through the Age of Reason. Readings, lectures and discussions of representative works. **3 Class Hours**

Prerequisite: FRE 202 Intermediate French II

FRE 204 Masterpieces of French Prose and Poetry II 3 Credits

The Age of Romanticism to contemporary times. Readings, lectures and discussions of representative works. **3 Class Hours**

Prerequisite: FRE 203 Masterpieces of French Prose and Poetry I

FRE 205 The Art of French Conversation & Composition 3 Credits

To develop the student's perception and appreciation of spoken and written French to prepare him or her for further study of the French language, literature and culture. **3 Class Hours**

Prerequisite: FRE 201 and FRE 202 Intermediate French or equivalent

FRE 299 Independent Study: French 1-3 Credits

An individual student project concerned with advanced work in a specific area of French. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in French

German

GER 101, 102 Beginning German 4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom. Written homework assignments, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours, 1 Laboratory Hour each

Prerequisite: GER 101 Beginning German for GER 102

GER 201 German Conversation and Composition 3 Credits

Emphasis on the four language skills—reading, writing, speaking, listening—especially on speaking and writing. Intensive discussion of style, grammar and the contemporary idiom to enhance the student's ability to express himself in German.

3 Class Hours, 1 Laboratory Hour

Prerequisite: GER 102 Beginning German

GER 202 Introduction to German Literary Analysis 3 Credits

Reading and analytical discussion of original texts of standard authors from early writings through the 20th Century with cultural historical implications. Essays and reports on reading in German. **3 Class Hours**

Prerequisite: GER 201 German Conversation and Composition

GER 203 Living German Literature I — 3 Credits

Masterpieces of the 17th and 18th Centuries. Lectures, readings and discussions of outstanding authors of the 17th and 18th Centuries, with literary, cultural and historical implications. Essays and reports on readings in German.

3 Class Hours

Prerequisite: GER 202 Introduction to German Literary Analysis

GER 204 Living German Literature II — 3 Credits

Masterpieces of the 19th and 20th Centuries. Lectures, readings and discussions of outstanding authors of the 19th and 20th Centuries, with literary, cultural and historical implications. Essays and reports on readings in German.

3 Class Hours

Prerequisite: GER 203 Living German Literature I

GER 210 Germany Today and Tomorrow — 3 Credits

German as a universal language and the international scope of its literature. Historical and cultural problems. International relationship, education, transportation, Germany's plans for the next century. Taught in English.

3 Class Hours

GER 299 Independent Study: German — 1-3 Credits

An individual student project concerned with advanced work in a specific area of German. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in German

Italian

ITA 101, 102 Beginning Italian — 4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts. **4 Class Hours, 1 Laboratory Hour each**

Prerequisite: ITA 101 Beginning Italian for ITA 102

ITA 201 Intermediate Italian I — 3 Credits

Comprehensive review of grammar and structure of the language. Intensive reading of literary works as a basis for topics of conversation in Italian in the classroom. Emphasis on aural comprehension and oral practice in classroom and audio-lingual laboratory. **3 Class Hours, 1 Laboratory Hour**

Prerequisite: ITA 102 Beginning Italian

ITA 202 Intermediate Italian II — 3 Credits

Intensive reading of literary works of recognized authors as a basis for topics of conversation in Italian in the classroom. Practice in audio-lingual laboratory. **3 Class Hours, 1 Laboratory Hour**

Prerequisite: ITA 201 Intermediate Italian I

ITA 299 Independent Study: Italian — 1-3 Credits

An individual student project concerned with advanced work in a specific area of Italian. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in Italian

Spanish

SPA 101, 102 Beginning Spanish 4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours, 1 Laboratory Hour each
Prerequisite: SPA 101 Beginning Spanish for SPA 102

SPA 201 Intermediate Spanish I 3 Credits

Intensive review and continuation of grammar and syntax. Intensive and extensive reading of literary works of recognized authors. Aural comprehension and oral practice in the classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: SPA 102 Beginning Spanish

SPA 202 Intermediate Spanish II 3 Credits

Intensive and extensive reading of lierary works of recognized authors. Classroom discussion and conversation based on these texts, in the language.

3 Class Hours, 1 Laboratory Hour
Prerequisite: SPA 201 Intermediate Spanish I

SPA 203, 204 The Spanish Language Through Its Literature 3, 3 Credits

Practice in and emphasis on conversation and composition in Spanish, based on the reading of various literary masterpieces from centuries past to the present.

3 Class Hours each
Prerequisites: SPA 202 Intermediate Spanish II for SPA 203
SPA 203 The Spanish Language Through Its Literature for SPA 204

SPA 205 Spanish Conversation & Composition I 3 Credits

The art of conversation and writing in Spanish practiced from basic proficiency to that of a more advanced level. Topics of conversation of common, daily interest subjects. Writing of short paragraphs and letters. **3 Class Hours**
Prerequisite: SPA 202.Intermediate Spanish II or equivalent

SPA 299 Independent Study: Spanish 1-3 Credits

An individual student project concerned with advanced work in a specific area of Spanish. Conducted under.the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in Spanish

Philosophy

PHI 101 Philosophical Problems 3 Credits

Basic problems of philosophy, such as *a priori* knowledge, the reality of the physical world, morality, the mind-body relationship, freedom and the supernatural. **3 Class Hours**

PHI 102 Introduction to Philosophy 3 Credits

Meaning of philosophy, suggestions for reading philosophy, informal logic, methodology and basic philosophical terms including idealism, dualism, naturalism. **3 Class Hours**

PHI 103 Philosophy of Mind 3 Credits

Theories of major philosophers as to the nature and limits of human knowledge and the nature of reality. Problem of knowledge of the physical world, the mind-body problem, free-will problem, existentialist's view of man.

3 Class Hours

Prerequisite: PHI 102 Introduction to Philosophy recommended

PHI 104 Philosophy of Religion 3 Credits

Relation of religion and philsophy and an investigation of different concepts of God. Analyses of religious types and experiences, different attempts to justify religious beliefs. Investigation of the logic of religious experience through an analysis of the leading ideas in the philosophy of religion both as an historical and contemporary phenomenon. **3 Class Hours**

Prerequisite: PHI 102 Introduction to Philosophy recommended

PHI 111 Humanities 3 Credits

Critical analysis of man's development from his early beginnings to his present state through a thematic investigation of literature, philosophy, history and the arts. Classical, Medieval, Renaissance and Metaphysical Periods.

3 Class Hours

PHI 112 Humanities 3 Credits

Critical analysis of man's development from his early beginnings to his present state through a thematic investigation of literature, philosophy, history and the arts. Neo-classical, Romantic, Victorian, Early Modern and Late Modern Periods.

3 Class Hours

PHI 120 Verbal Reasoning 3 Credits

To improve the students' ability in reasoning. Concentration on qualification, symbols, ambiguity, analysis and semantics. **3 Class Hours**

PHI 201 Ethics 3 Credits

Main classical and modern ethical theories, including such theorists as Plato, Aristotle, Spinoza, Mill, Kant, Moore, Toulmin, Ayer, Westermarck. Comparison and contrast of normative and meta-ethical theories, the good life and how one should act, the meaning of moral judgments and the criteria of validity, justification of moral beliefs and the grounds of moral responsibility.

3 Class Hours

Prerequisite: PHI 102 Introduction to Philosophy recommended

PHI 202 Logic 3 Credits

Analysis and practical application of the elements of logic as they apply to thinking on both a linguistic and formal level. Forms of argument, informal and formal fallacies, significance of the emotions on decision making, inductive and deductive processes. **3 Class Hours**

PHI 203 Philosophical Issues in American Education 3 Credits

Philosophy of selected American educators, with attention on the historical development of the American educational system. Brief review of eduational outlooks from antiquity to the present, including Plato, Aristotle, Rousseau, Analysis of educational issues and of key terms in education from philosophical perspective. The nature of the individual, the school and society and the underlying philosophical interrelations that may exist. **3 Class Hours**

Prerequisite: PHI 102 Introduction to Philosophy recommended

PHI 204 Comparative Religions: Living Religions of the East 3 Credits

Survey of the major religions of the Eastern societies. Comparison of their similarities and differences. Focus on the contributions of religion to society in every day living, and its influence on thinking, culture and arts. Areas covered are primitive religions, the religions of India, Persia, Indochina, China, Japan.

3 Class Hours

PHI 205 Comparative Religions: Living Religions of the West 3 Credits

Survey of the major religions of the West. An examination of central beliefs, such as the belief that God is a Personal God and that there is life after death. Comparison made of their similarities and differences. Focus on the contributions of religion to society in everyday living, and its influence on the thinking, culture and arts of Western Man. Areas covered are Zoroastrianism, Judaism, Christianity and Islam. **3 Class Hours**

PHI 299 Independent Study: Philosophy 1-3 Credits

An individual student project concerned with advanced work in a specific area of philosophy. Conducted under the direction of a faculty member, independent study is concerned with material beyond the scope and depth of the ordinary course.

Prerequisite: 3 semester hours of college level work in philosophy

Physical Education Dept.

PED 100 Archery ½ Credit

Fundamentals of target shooting. Emphasis on shooting, point of aim and safety. Team competition within the class and archery games.

4 Class Hours, 11 Laboratory Hours per semester

PED 103 Back Packing 1 Credit

Designed to prepare students for a camping experience inaccessible by auto. The art of being self-sufficient with everything on your back. A three-day campout on the trail. Lightness stressed by eliminating all unnecessary items and utilizing lightweight food, shelter, sleeping bag and cooking equipment.

15 Class Hours, 15 Laboratory Hours per semester
Prerequisite: Camping experience or instructor's permission

PED 106 Badminton ½ Credit

Instruction and practice in the various strokes. Rules, terminology and equipment. Strategy for singles and doubles.

4 Class Hours, 11 Laboratory Hours per semester

PED 109 Basketball ½ Credit

A competitive team sport. Two-man and three-man plays, passing, dribbling and shooting drills, set offense, basic defense. Team play, leadership, knowledge of patterns and execution.

3 Class Hours, 12 Laboratory Hours per semester

PED 112 Bowling ½ Credit

Bowling fundamentals including ball selection, grip, stance, approach and delivery. Etiquette, scoring, correction of basic mistakes in delivery. Classes are at off-campus site and students must pay for own games and shoe rental.

2 Class Hours, 13 Laboratory Hours per semester

PED 118 Field Hockey ½ Credit

Basic skills needed for good competition in game situations. Emphasis on rules and responsibilities of each position on the team. Organized competition within the class. **4 Class Hours, 11 Laboratory Hours per semester**

PED 121 Golf ½ Credit

Skills, rules, etiquette and strategy. Field trips to a driving range and/or par-3 golf course, with students providing their own transportation and fees. Advanced students to play on a regulation course, providing their own transportation, greens fees and clubs. **4 Class Hours, 11 Laboratory Hours per semester**

PED 127 Jogging ½ Credit

Jogging as a possible leisure time activity. Physiological and psychological benefits, improvement of technique and basic principles of training. Individual works at own level and sets own goals. Distance usually worked: 2 miles.
3 Class Hours, 12 Laboratory Hours per semester

PED 130 Judo/Karate ½ Credit

Classical karate on the beginning and intermediate levels. History and philosophy of karate. Basic katas (forms) together with many pre-arranged sparring techniques. Free sparring with no body contact. Emphasis on physical conditioning and mental discipline. Meaning and value of self-discipline.
6 Class Hours, 24 Laboratory Hours per semester

Students vie with each other in a Karate class as part of their Physical Education.

PED 136 Modern Dance 1 Credit

Disciplined, progressive modern dance class based primarily on Graham Technique. The techniques promote body flexibility, muscle tone, stamina and self-confidence in body movements. Rhythms, dynamic changes, movement to music. Emphasis on correct body placement.

8 Class Hours, 22 Laboratory Hours per semester

PED 139 Self Defense ½ Credit

Brief explanation of karate, judo and other martial arts. Approximately 10 basic self-defense movements which, if properly acquired and practiced, can be applicable to many situations. Basic techniques of throwing, blocking, falling, punching and general body shifting motions. No definite dress required. A student should remember that exercises are meant to increase flexibility and endurance of muscles and the dress should be a comfortable one for this purpose. Although this is not the formal karate class, the class will be carried with formality and discipline.

3 Class Hours, 12 Laboratory Hours per semester

PED 142 Skiing ½ Credit

Instruction and practice in all phases of skiing (beginning through advanced). Conduct, terminology, safety and equipment. Basic racing technique demonstrated and practiced where sufficient skill level and interest are indicated. Classes at an off-campus site. **3 Class Hours, 12 Laboratory Hours per semester**

PED 145 Slimnastics ½ Credit

Exercises for all muscles of the body. Duration of each exercise and number of exercises used during the class hour gradually increased. Music used for intensive exercise routines. **4 Class Hours, 11 Laboratory Hours per semester**

PED 148 Soccer ½ Credit

Instruction and practice in the fundamental skills of kicking, tackling, trapping, dribbling and heading. Rules and tactics. Team competition.

4 Class Hours, 11 Laboratory Hours per semester

PED 150 Social Dance ½ Credit

Popular social dances and ballroom dances of the 20th Century. Warm-up exercises. Enrollment by mixed partners encouraged.

4 Class Hours, 11 Laboratory Hours per semester

PED 154 Speedball ½ Credit

A combination team sport involving skills common to soccer, basketball and football. Development of skills, rules and strategy of the game. Speedball is a fast moving, quick thinking game played with hands and feet.

4 Class Hours, 11 Laboratory Hours per semester

PED 169 Tennis ½ Credit

Instruction and practice in the basic strokes—forehand, backhand, serve and volley. Rules, terminology and equipment. Strategy for singles and doubles.

4 Class Hours, 11 Laboratory Hours per semester

PED 172 Volleyball ½ Credit

A basic course in the fundamentals of power volleyball. Team strategy, history and rules of United States Volleyball Association. Drills and competitive play.

6 Class Hours, 9 Laboratory Hours per semester

PED 175 Weight Training ½ Credit

Individualized work on weight machine. Student selects activities along with instructor's guidance. Emphasis on improvement of weaknesses and a balanced approach. Physical fitness, principles of training.

3 Class Hours, 12 Laboratory Hours per semester

Social Sciences Dept.

NOTE—Political Science courses—POS 210, 202, 203, 204 and 299—may be used to satisfy the degree requirements in Social Science. See the course descriptions under the History and Political Science Department, page 87.

Anthropology

ANT 110 Physical Anthropology and Archeology 3 Credits

Introduction to human evolutionary history and present day variation examining genetics, ecology, fossils and the primate order. Relationships of physical evolution to early cultural developments as revealed by the archeological record.
3 Class Hours

ANT 111 Cultural Anthropology 3 Credits

Comparison of various Western and non-Western societies and cultures. Anthropological theory, linguistics, problems of modernization of traditional societies.
3 Class Hours

ANT 210 Peoples and Cultures of the Pacific 3 Credits

Social organization. Cultures and physical types of the native peoples of Polynesia, Melanesia, Micronisia, and Australia. Culture history, ecology and effects of modernization on traditional cultures.
3 Class Hours
Prerequisite: ANT 111 Cultural Anthropology

ANT 299 Independent Study 1-3 Credits

An individual student project in anthropology which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairman.
Prerequisite: 3 semester hours in Anthropology

Economics

ECO 101 Consumer Economics 3 Credits

Institutions and forces directly affecting the consumer: consumer income and expenditure patterns, personal finance, credit and tax problems. Personal investment alternatives. Impact of the consumer movement on the individual and society. Business students should take BUS 131 Personal Finance instead of this course.
3 Class Hours

ECO 104 Labor Economics and American History 3 Credits

Interaction between business, labor and government. Analysis of the causes of unemployment and income inequality. Connection between productivity, wages, prices and employment and application of anti-trust and labor laws to firms and unions.
3 Class Hours

ECO 107 Health Economics and Law 3 Credits

Legal and economic aspects of health care in America. Demand for health services, factors which influence its cost, supply and adequate delivery. Alternate ways of solving problems posed. The role of governmental, social and economic policy in the health care field. Medical law as it affects those in medically related fields.
3 Class Hours

ECO 110 Introduction to Micro-Economics 3 Credits

Supply, demand and the market system as they relate to contemporary economic problems including poverty, energy, the environment and urban decay. The allocation of resources under conditions of competition and various degrees of monopoly. Rationale behind anti-trust laws and other governmental attempts to control monopoly power and promote economic well-being. Comparative economic systems. **3 Class Hours**

ECO 111 Introduction to Macro-Economics 3 Credits

Causes of unemployment and inflation and the government's efforts to control them. Problems of economic growth as they relate to our economy and to other countries developed and underdeveloped. International trade and finance problems. **3 Class Hours**

ECO 120 American Economic History 3 Credits

A topical approach to the economic impetus behind the growth and development of the United States. Colonial heritage and the market system, population and natural resources, agriculture, transportation, labor, business, the capital market and the influence of government. Understanding today's economic problems by observing how they developed historically. **3 Class Hours**

ECO 130 Political Economy 3 Credits

Historical account of the rise of capitalism and its supporting ideology. An appraisal of the successes and failures of capitalism, of its changing form in Europe and America, and of its future. A critique of capitalism, from the "conservative, liberal and radical" perspectives, which examines the major ideas of Friedman, Keynes, Galbraith and Marx, among others. **3 Class Hours**

ECO 140 Economics of Urban Problems 3 Credits

Application of economic analysis to urban problems, an understanding of the economic forces that affect housing, transportation, poverty, crime, land use, the financing of urban services and the urban future. **3 Class Hours**

ECO 299 Independent Study 1-3 Credits

An individual student project in economics which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairman.

Prerequisite: 3 semester hours in economics

Geography

GEO 110 Physical Geography 3 Credits

Interrelationships of landform, climate, vegetation, soils and their significance to man. **3 Class Hours**

Psychology

PSY 100 Psychology of Personal Adjustment 3 Credits

Investigation of bio-cultural factors which influence human behavior and study of the development of well-adjusted personality. Attention is directed to the learning and thinking the individual employs in solving personal problems in everyday living. (This course cannot be used as a prerequisite for other psychology courses). **3 Class Hours**

PSY 110 General Psychology 3 Credits

Definition and description of psychology. Functions of the neural system, sensation and perception, learning, memory, motivation, emotion, conflict and frustration, personality, social psychology. Methods and statistical applications, history and fields of psychology. **3 Class Hours**

PSY 211 Child Development 3 Credits

The growth, maturation and development of children, including mental and motor phases, learning, motivation and personality formation.

3 Class Hours
Prerequisite: PSY 110 General Psychology

PSY 212 Adolescent Development 3 Credits

The adjustment processes necessary for the child to become an adult. Development of socialization, personal goals and enlargement of self-concept. Formative influences of social institutions and environmental elements relative to the growth of the individual. **3 Class Hours**
Prerequisite: PSY 110 General Psychology

PSY 214 Abnormal Psychology 3 Credits

Description and criteria for normal and abnormal personality. Dynamic processes of adjustment, the coping process. Definition and description of sociopathic, psychopathic, neurotic and psychotic behavior. Development of both functional and organic disorders. **3 Class Hours**
Prerequisite: PSY 110 General Psychology

PSY 217 Counseling and Interviewing 3 Credits

Varied methods of interviewing and counseling, group dynamics employing current theories, situational examples and means for determination of method to be used. Practical cases in social services, clinics, hospitals and educational institutions. Over-all training and personality of the counselor.

3 Class Hours
Prerequisite: PSY 110 General Psychology

PSY 220 Mental Health 3 Credits

Changing attitudes toward mental health and the treatment of individuals requiring care. Growth and development of procedures, facilities and programs. Means of establishing assistance for individuals and the combination of efforts leading to improved mental health. Therapies presently employed within the over-all mental health program. **3 Class Hours**
Prerequisite: PSY 110 General Psychology

PSY 223 Intelligence and the Mentally Retarded 3 Credits

The several meanings of the concept of intelligence, distribution of intelligence in populations, development and organization of intelligence at different levels, concepts of retardation. The various levels and causations of retardation, development at all chronological ages, learning and employment expectations, methods of assisting with behavioral improvement, cooperative social agencies.

3 Class Hours
Prerequisite: PSY 110 General Psychology

PSY 227 Behavior Modification 3 Credits

Principles of behavior modification using classical and operant techniques. Practical applications of these principles to the fields of child care, psychotherapy and correctional institutions. **3 Class Hours**
Prerequisite: PSY 110 General Psychology

PSY 299 Independent Study — 1-3 Credits

An individual student project in psychology which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairman.

Prerequisite: PSY 110 General Psychology plus 3 additional hours in a 200 level PSY course

Sociology

SOC 110 Introduction to Sociology — 3 Credits

Sociological facts and principles dealing with the scientific study of human relationships. Emphasis on analysis and study of culture and human society, socialization, groups and group structures. Stratification, collective behavior patterns and the concept of social institutions. Initial experiences for students who desire an introduction to the sociological perspective. **3 Class Hours**

SOC 111 Social Problems — 3 Credits

The sociology of social and urban problems—who and how they develop and how people are affected. Crime, population, the race problem in America, mass communication. Deviant behavior such as mental illness, alcoholism, gambling, drug addiction, prostitution and homosexuality. Introductory Sociology course is recommended as an initial experience. **3 Class Hours**

SOC 210 Crime and Deviant Behavior — 3 Credits

The theoretical aspects of deviance as crime, variations in crime rates, the social and psychological causes of crime, other deviant behavior and the salient research discoveries in these areas. Specific areas within criminology such as homicide and suicide from a multidisciplinary approach to permit as broad an understanding of the problem as possible.

3 Class Hours

Prerequisite: SOC 110 Introduction to Sociology

SOC 220 Minority Groups — 3 Credits

Various minority-majority (racial and ethnic) situations confronting contemporary America. Special focus on the sociological ramifications of these situations. Social movements and conflicts. **3 Class Hours**

Prerequisite: SOC 110 Introduction to Sociology

SOC 230 Marriage, Family and Divorce — 3 Credits

Social and personal factors which make for adequate family functioning, the forms the family takes, its internal processes and the functions it serves in society, to cover systematically the important theoretical and experimental ground on those issues relevant to both the scholarly and practice-minded student.

3 Class Hours

Prerequisite: SOC 110 Introduction to Sociology

SOC 234 Sociology of Drugs — 3 Credits

The focus of concern will be an assessment of drugs and drug abuse that constitute part of an over-all lifestyle. Emphasis on values, attitudes, philosophies and culture-bearers or "heroes." The class will attempt to objectively identify and place into a sociological context the conditions and traditions from which the "now" person has emerged. **3 Class Hours**

Prerequisite: SOC 110 Introduction to Sociology

SOC 299 Independent Study 1-3 Credits

An individual student project in sociology which is beyond the scope or requirements of the courses offered by the department, conducted under the direction of a faculty member and approved by the department chairman.

Prerequisite: 3 semester hours in sociology

Interdisciplinary Social Science

SOS 110 Public Affairs: Domestic 3 Credits

Contemporary problems in America—racial strife, urban decay, educational dilemmas, poverty, pollution—examined from a "policy" perspective: what can and should government do about them? Attention to explanations rooted in values (liberty, equality), theory (political, economic, sociological), and practice (politics), and strategies for solving problems. **3 Class Hours**

SOS 111 Public Affairs: Foreign 3 Credits

The ideological setting of global problems—economic development, aid, trade, food, population conflict, defense. American foreign policy toward USSR, China, Southeast Africa, Latin America, the Middle East examined critically. Continuing search for solutions to the problems of humankind.

3 Class Hours

SOS 120 Science and Civilization 3 Credits

A survey of the interplay between science/technology and Western Civilization from earliest times to the present (major emphasis on the industrial and post-industrial periods). Role of culture in determining scientific/technological advances, interplay between war and scientific/technological advances, necessary conditions for an industrial revolution (scientific/technological), impact of science/technology on a post-industrial society. **3 Class Hours**

SOS 130 Man, Technology and Environment 3 Credits

Biological, economic and political dimensions of the environmental crisis. The conditions created by population growth, a rising standard of living, the increased demand on natural resources and the advance of technology. Alternative strategies to deal with pollution and energy problems. **3 Class Hours**

SOS 145 Psychology of Sex Roles 3 Credits

Biological, social and psychological determinants of maleness and femaleness. Physical, economic, political, Biblical and psychological causes of sexism (male superiority). Relationship to cultural evolution. **3 Class Hours**

Human Services

Child Care (CDC) and Criminal Justice (CRJ) courses may not be used to satisfy the Social Science requirement.

Child Care

The Child Care program was developed with great flexibility in course selection and could be taken on a part-time basis by those individuals currently employed in the field. Those students who wish to pursue it on a full-time basis should contact the Program Coordinator of Child Care. Very close planning and advisement will be necessary to pursue this program to its completion in two years.

CDC 100 Introduction to Education of Young Children 3 Credits

An over-all view of nursery education and where it is going. Discussion of various philosophies and methods, programming, scheduling (what should go into scheduling a day for a pre-schooler and when). Focus on social, emotional and physical needs of young children and the importance of the "self concept" for both the child and the adult working with young children. Introduction to the college's Nursery Education program covering requirements, courses and career information. A required number of observations in pre-schools, nurseries and day care centers in the area, as well as a special laboratory project.

2 Class Hours, 2 Laboratory Hours

CDC 110 Fundamentals of Music 2 Credits

Learn how to read musical notation for teaching nursery songs and planning simple accompaniments. Ear training, which aids the student in developing the ability to sing and transpose melodies at sight using techniques based upon the Kodaly System. Emphasis on music skills for students preparing to work with young children. **2 Class Hours**

CDC 120 Curriculum Development 3 Credits

A pre-school curriculum for students planning to work in day-care centers and nursery schools. Emphasis on how art, language, math, creative play, science and outdoor play programs are used for the physical, social, emotional and mental development of the young child. Sharing and implementing ideas through special projects and construction and implementation of material related to specified areas. Students will be required to perform certain activities in a nursery school setting or with groups of children. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: CDC 100 Introduction to Education of Young Children

CDC 130 Pre-School Music: Materials and Methods 3 Credits

Music for pre-school children emphasizing songs, singing games and rhythmic movement. Review of basic harmony for accompaniments. Role of music in over-all learning when used as a medium for the development of social, intellectual and physical capacities or skills. Survey of current methods of music instruction for pre-school and kindergarten children throughout the world. Live demonstrations with young children as well as movies and slides. Students will be expected to apply these various methods in a nursery school setting.

2 Class Hours, 2 Laboratory Hours

Prerequisite: CDC 110 Fundamentals of Music
or permission of instructor

CDC 140 Art for Young Children 3 Credits

In-depth coverage of art education as it contributes to the pre-school child's emotional, physical and psychological growth. Needs of pre-schoolers in this area and ways to foster creativity and skill acquisition. Materials and methods appropriate for this age. A laboratory experience working with pre-schoolers in art will be required. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: CDC 100 Introduction to Education of Young Children

CDC 150 Motor Development 3 Credits

Designed to give the student an understanding of normal motor development and how it relates to cognitive and perceptual development. A program of motor development activities with young children through actual involvement in a nursery school program. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: CDC 100 Introduction to Education of Young Children

CDC 160 Nutrition 3 Credits

Basics of good nutrition with emphasis on children. Ideas on planning and preparing snacks and meals and teaching good nutrition habits to children. Ideas on fitting nutrition into the nursery education curriculum and tying it to other subjects. Projects for practical application and experience in a nursery school setting. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: CDC 100 Introduction to Education of Young Children

CDC 170 Practicum I 3 Credits

Designed to meet the needs of both the experienced and the inexperienced students. The inexperienced student is placed in a classroom setting conducive to the learning of desired teacher competencies, working with an experienced supervising teacher. Six hours per week for twelve weeks in this situation. Self-evaluation as well as being evaluated by others.

The experienced student is given some credit for work experience. For him her, the practicum emphasizes self-evaluation according to classroom competencies. Both experienced and inexperienced students in group seminars with a college representative and meeting for individual consultations.

Prerequisite: 30 hours of counseled coursework

CDC 200 Social Psychology of Education 3 Credits

An investigation of the social and psychological factors that affect a child's learning processes. How the interaction of the unique characteristics of teachers, community, family and society contribute to the learning environment of the classroom. How learning outcomes can be efficiently achieved. Desirable conditions for learning.

2 Class Hours, 2 Laboratory Hours
Prerequisite: PSY 110 General Psychology and
SOC 110 Introduction to Sociology

CDC 210 Special Problems in Children 3 Credits

How to understand and help the child with a special problem. Normal adjustment problems, learning disabilities, physical handicaps, retardation and the emotionally disturbed child. Techniques for the classroom teacher and places to get help. Actual student involvement with children who exhibit these problems.

2 Class Hours, 2 Laboratory Hours
Prerequisite: PSY 211 Child Development and
CDC 200 Social Psychology of Education

CDC 220 Trends in Education of Young Children 3 Credits

An overview and insight into various philosophies and materials of education for young children, including Montesseri, Piaget, open education (comparing English and American schools), affective education, behavior modification. The course aims to develop the competency of the student through practical application.

2 Class Hours, 2 Laboratory Hours
Prerequisite: CDC 100 Introduction to Education of Young Children

CDC 230 Working with Parents in Nursery Programs 3 Credits

Designed to introduce the need for the parent's involvement in the education of the young child. Benefits for teachers, parents and children, when teachers and parents work closely together. Consideration of feelings of teachers and parents which help or hinder their working together. Various aspects of working with parents, such as home visiting, group parent meetings, newsletters and written communications, parent conferences and the use of volunteers in the classroom. Part of the course on a workshop basis, and students required to develop a special project to earn their third credit.

2 Class Hours, 2 Laboratory Hours
Prerequisite: CDC 100 Introduction to Education of Young Children
and CDC 200 Social Psychology of Education

CDC 250 Language in Early Childhood 3 Credits

A developmental study of language growth in young children and its influence on learning, (cognitive abilities, social and behavioral concepts). Contemporary language theories and programs including a diagnostic approach to teaching language, (communication skills, reading readiness and literature appreciation) in the pre-school. The student will be expected to spend a number of hours in a special project requiring observations of individual children and language arts programs.

2 Class Hours, 2 Laboratory Hours
Prerequisite: CDC 100 Introduction to Education of the Young Child

CDC 290 Practicum II — 6 Credits

Designed to be flexible depending upon the needs and interests of the student. Project for experienced students based on the development of these needs and interests. Project must be approved. The experienced student to share ideas from his areas of strength in seminar situations.

For the inexperienced student, a classroom situation to conduct a self-evaluation of own competencies as a teacher, as well as being evaluated by others. Work with an experienced supervising teacher. The inexperienced student to spend 9 hours per week in a classroom situation for 12 weeks.

Prerequisite: CDC 170 Practicum I and CDC 200 Social Psychology of Education

CDC 299 Independent Study in Child Care — 1-2-3 Credits

An individual student project in child care beyond the scope or requirements of the courses offered by the department. Under the direction of a faculty member and approved by the program coordinator and department chairman. No more than 3 credits may be acquired toward the Child Care degree in independent study projects.

1-2-3 Class Hours

Prerequisite: 6 Semester hours in Child Care courses

Criminal Justice

The Criminal Justice program was developed with great flexibility in course selection and could be taken on a part-time basis by those individuals currently employed in the field. Those students who wish to pursue it on a full-time basis should contact the Program Coordinator of Criminal Justice through the Liberal Arts Division. Very close planning and advisement will be necessary to pursue this program to its completion in two years.

CRJ 100 Survey of Law Enforcement — 3 Credits

History, development and philosophy of law enforcement in a democratic society. Introduction to agencies involved in the administration of criminal justice. Career orientation.

3 Class Hours

CRJ 110 Police Administration — 3 Credits

Principles of police management as they relate to organization, functions and activities. Development of policy. Public relations. Professionalism.

3 Class Hours

CRJ 120 Criminal Procedure and Constitutional Law — 3 Credits

A review of the steps taken under New York State law to dispose of criminal matters from arrest to appeal, including concepts of probation and parole.

3 Class Hours

CRJ 200 Administration of Justice — 3 Credits

An examination of the mechanism under which justice is dispensed under the democratic system. Emphasis on the organization of courts from the federal to the local level.

3 Class Hours

CRJ 210 Penal Law — 3 Credits

A detailed study of criminal liability and elements of substantive offenses. Defenses to crime and authorized sentences for crime. Based on the Penal Law of New York State.

3 Class Hours

CRJ 220 Evidence for Law Enforcement 3 Credits

A comprehensive analysis of the rules of evidence as they apply in criminal cases. Emphasis on problems encountered by law-enforcement officers in such areas as illegally obtained evidence and wire-tapping. **3 Class Hours**

CRJ 230 Criminal Investigation 3 Credits

Basic principles of criminal investigation as they relate to the collection, preservation, identification and examination of physical evidence. Techniques of locating and interviewing witnesses. **3 Class Hours**

Prerequisites: 3 years law enforcement of experience or CRJ 210 Penal Law or CRJ 220 Evidence for Law Enforcement

CRJ 240 Introduction to Corrections 3 Credits
(Formerly Prison, Probation and Parents)

Corrections are enshrouded with myths and hampered by public attitudes. Student involvement in the correctional system through discussions, reading, field trips, movies and other experiences. The relationship of law enforcement, corrections, family conditions and correctional treatment methods. **3 Class Hours**

Prerequisite: SOC 110 Introduction to Sociology or SOC 111 Social Problems

CRJ 250 Juvenile Delinquency 3 Credits

Causes and treatment of the juvenile delinquent, his apprehension and commitment. Various methods of caring for delinquent, including the present day, psychiatric approach. Problems related to juvenile justice abuses. Case studies, visual aids, guest lecturers and visits to juvenile institutions will supplement the lecture and project approach. **3 Class Hours**

Prerequisite: SOC 101 Introduction to Sociology or SOC 111 Social Problems

SCIENCE AND ENGINEERING TECHNOLOGY DIVISION

Chemistry and Chemical Technology Dept.

CHM 102 Preparatory Chemistry 4 Credits

Introductory course in chemistry emphasizing problem-solving techniques related to chemical concepts. Atomic structure, stoichiometry, chemical bonding, solution chemistry. **4 Class Hours**

CHM 125 Chemistry 3 Credits

Fundamental concepts of inorganic chemistry. Composition of substances, kinetic and molecular theories, atomic structure and bonding, solutions and collards, ions in solution and introduction to organic chemistry. For Fire Protection Students. **2 Class Hours, 3 Laboratory Hours**

CHM 131 Chemistry 4 Credits

Fundamental concepts of inorganic chemistry. Stoichiometry, atomic structure, periodicity, chemical bonding, kinetic theory, states of matter, acids and chemical equilibria. For Medical Laboratory Technology students. **3 Class Hours, 3 Laboratory Hours**

CHM 132 Chemistry 4 Credits

A continuation of CHM 131 Chemistry including chemical equilibria, coordination chemistry and an extensive treatment of classical quantitative analysis. For Medical Laboratory Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 131 Chemistry

CHM 135 Chemistry 4 Credits

A general chemistry course including atomic structure and periodicity, chemical bonds, states of matter and kinetic molecular theory, chemical reactions and stoichiometry,, acqueous solutions, reaction rates and chemical equilibrium, electrolyte equilibria. For Health Science students.

3 Class Hours, 3 Laboratory Hours

CHM 136 Chemistry 4 Credits

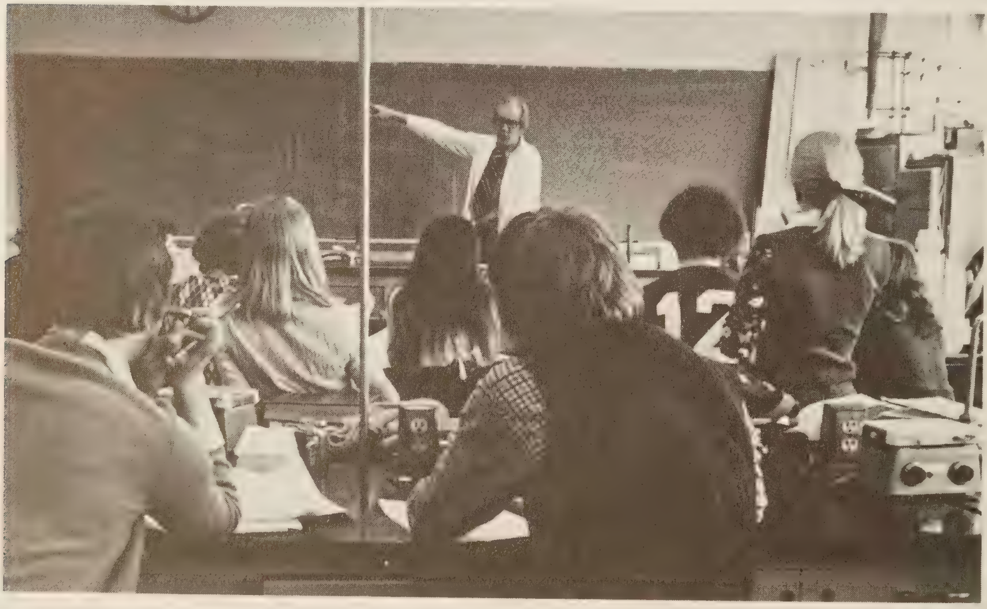
Continuation of CHM 135 Chemistry. Introduction to Organic Chemistry. Families of organic compounds, stereoisomerism, carbohydrates, lipids, proteins, enzymes, nucleic acids. Metabolism of carbohydrates, lipids and proteins. Body fluids, biochemistry of drugs. For Health Science students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 135 Chemistry or CHM 102 Preparatory Chemistry or equivalent

CHM 138 Clinical Calculations 1 Credit

Clinical calculations encountered in the health care services. Degree of accuracy, factor-label method, review of metric system, systems and units of measurement, conversions, percentage solutions, dosages, clinical calculations. For Health Science students. **1 Class Hour**

Instructor explains a chemistry experiment to the students before they begin performing the experiment.



CHM 141 General Chemistry 4 Credits

Fundamental principles, laws and theories of chemistry relating to simple atomic and molecular structure. Periodicity, bonding, stoichiometry relationship, states of matter, water, reaction rates and equilibrium. Chemistry of solutions, electrochemistry, metals, non-metals, nuclear processes. For Liberal Arts non-science majors. **3 Class Hours, 3 Laboratory Hours**

CHM 142 General Chemistry 4 Credits

A continuation of CHM 141 General Chemistry. Basic concepts of organic chemistry, polymers, environmental chemistry: air and water pollution. Introduction to biochemistry: carbohydrates, lipids, proteins, enzymes. Chemistry of medicine. For Liberal Arts non-science majors.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 141 General Chemstry

CHM 145 Chemistry 4 Credits

Principles and laws of chemical reactivity of the elements integrated with theories of atomic structure, chemical bonding, and correlated with the position of the elements on the periodic table. Properties of chemical compounds, states of matter, stoichiometric calculations in terms of these basic concepts. For Liberal Arts science majors. Also Chemical Technology students with departmental approval. **3 Class Hours, 3 Laboratory Hours**

CHM 146 Chemistry 4 Credits

Continuation of CHM 145 Chemistry. Solutions, ionization, acids, bases and salts, electrolysis, oxidation-reduction, coordination chemistry, thermo-chemistry, study of chemical equilibrium and equilibrium constants. For Liberal Arts science majors. Also Chemical Technology students with departmental approval.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 145 Chemistry

CHM 149 Forensic Science 4 Credits

Introduction to forensic chemistry, including the structure and properties of matter. Emphasis on understanding the properties of substances found in crime scene investigations and subsequent laboratory analysis. Photography, chemical microscopy, chemical instrumentation along with classical experiments in the laboratory. **3 Class Hours, 3 Laboratory Hours**
Prerequisite: CHM 141 General Chemistry

CHM 161 Chemistry 4 Credits

Basic concepts underlying chemical action emphasizing measurement, basic chemical calculations, atomic structure and the periodic law, chemical bonding, states of matter, solutions, kinetic and molecular theories, chemical equilibrium and energy changes in chemical reactions. For Chemical Technology students.

3 Class Hours, 3 Laboratory Hours

CHM 162 Chemistry 4 Credits

A continuation of CHM 161 Chemistry. Oxidation-reduction and electrochemistry, acids, bases and salts. Solubility product principle and coordination compounds. Laboratory work includes qualitative cation analysis and volumetric methods and techniques. For Chemical Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 161 Chemistry

CHM 190 Forensic Police Chemistry 3 Credits

Introduction to the chemistry of elements, compounds and mixtures. Physical and chemical properties of substances commonly found at crime sites. Laboratory analysis of these substances. Emphasis of techniques used in the laboratory and proper handling of materials prior to analysis. Introductory period involving classical laboratory techniques, then experiments using modern instrumentation such as gas chromatography and infrared spectroscopy.

2 Class Hours, 2 Laboratory Hours

CHM 191, 192 Advanced Placement Chemistry I and II 3, 3 Credits

An opportunity for students still in high school to take a chemistry course for college credit. The course will be taught within the guidelines provided by the College Entrance Board. Structure of matter, states of matter, types of reactions, chemical equilibrium, stoichiometry, kinetics and thermodynamics.

2 Class Hours, 3 Laboratory Hours each
Prerequisites: For CHM 191—recommendation from high school guidance counselor or chemistry department
For CHM 192—Prerequisite is CHM 191

CHM 193, 194 Chemistry I and II 4, 4 Credits

Chemistry in a non-technical presentation. Historical approach emphasizing scientific thought in developing concepts. The relevance of science to man will be the central theme. The student can acquire an appreciation of scientific ideas, even rather sophisticated ones, rather than merely accumulate information. For Business students and Liberal Arts non-science majors.

3 Class Hours, 2 Laboratory Hours each
Prerequisite: CHM 193 Chemistry for CHM 194

CHM 197 Basic Chemistry I 1 Credit

Measurement in science and chemistry. A basic approach to measurement as a concept, its history and its applicability in science. This is a 5-week course for elementary school teachers. **2 Class Hours, 2 Laboratory Hours**

CHM 198 Basic Chemistry II 1 Credit

Matter and its properties. A fundamental course emphasizing the periodic table and relationships of the elements, atomic structure and bonding. This is a 5-week course for elementary school teachers.

2 Class Hours, 2 Laboratory Hours

CHM 199 Basic Chemistry III 1 Credit

Solutions, acids and bases and chemical reactions. The essentials and fundamentals of chemical reactivity and activity. This is a 5-week course for elementary school teachers. **2 Class Hours, 2 Laboratory Hours**

CHM 221 Organic Chemistry 3 Credits

Nomenclature, properties of selected functional groups, mechanisms, stereochemistry, synthetic methods and spectroscopy. The laboratory covers techniques of separation and purification including gas chromatography, synthesis and spectroscopy. For Medical Laboratory Technology students.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 132 Chemistry

CHM 222 Organic Chemistry 3 Credits

A continuation of CHM 221 Organic Chemistry including a study of the structure, reactivity and stereochemistry of important biomolecules. Laboratory includes multi-step synthesis as well as selected experiments with biomolecules.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 221 Organic Chemistry

CHM 224 Instrumental Analysis 4 Credits

Theory and laboratory instruction in electrochemical and optical methods of analytical chemistry, including potentiometry, polarography, amperometry, coulometry, conductimetry, radiochemistry. Ultraviolet-visible, infrared, atomic absorption and emission spectroscopy. Column, thin-layer and gas chromatography. For Medical Laboratory Technology students.

2 Class Hours, 6 Laboratory Hours
Prerequisite: CHM 132 Chemistry

CHM 245 Organic Chemistry 5 Credits

A fundamental treatment of organic chemistry. Nomenclature, properties of selected functional groups, mechanisms, stereochemistry, synthetic methods and spectroscopy. The laboratory stresses basic techniques of reactions, separation, purification and isolation by classical methods as well as modern instrumental techniques. For Liberal Arts science majors and Chemical Technology students with departmental approval. **3 Class Hours, 4 Laboratory Hours**

Prerequisite: CHM 146 Chemistry or CHM 162 Chemistry

CHM 246 Organic Chemistry 5 Credits

A continuation of CHM 245. Also includes such biomolecules as fats, carbohydrates, proteins and nucleic acids. The laboratory emphasizes multistep syntheses and qualitative organic analysis. **3 Class Hours, 4 Laboratory Hours**

Prerequisite: CHM 245 Organic Chemistry

CHM 261 Organic Chemistry 5 Credits

A systematic study of organic chemistry. Nomenclature, structures, reaction mechanisms, chemical properties, syntheses, effects on man and his environment. Laboratory experiments include separations, identifications, syntheses. For Chemical Technology students. **3 Class Hours, 6 Laboratory Hours**

Prerequisite: 1 year of college General Chemistry or CHM 146 Chemistry or CHM 162 Chemistry

CHM 262 Organic Chemistry 5 Credits

An extension of CHM 261 Organic Chemistry, a systematic study of organic compounds. Spectroscopy, heterocyclic compounds and polymer chemistry. The laboratory emphasizes synthesis, qualitative organic analysis and polymer characterization. For Chemical Technolgy students.

3 Class Hours, 6 Laboratory Hours

Prerequisite: CHM 261 Organic Chemistry

CHM 265 Instrumental Methods of Chemical Analysis 5 Credits

Principles and techniques of modern quantitative analysis including Kjeldahl nitrogen analysis, chelatometry, ion-exchange, non-aqueous titrations, conductimetry, coulometry, electrogravimetry, polarography, amperometry, potentiometry, radioisotope methodology. Statistical evaluation of data obtained by the various analytical methods. For Chemical Technology and Liberal Arts "Chemical Model" students. **3 Class Hours, 6 Laboratory Hours**

Prerequisite: 1 full year of college General Chemistry and MAT 142 Applied Calculus I and PHY 142 Physics

CHM 266 Instrumental Methods of Chemical Analysis 5 Credits

Principles and techniques of modern instrumental methods of chemical analysis including ultraviolet, visible, infrared, nuclear magnetic resonance, atomic absorption, emission and mass spectroscopy. Column, thin-layer, gel permeation, gas and liquid-liquid chromatography. Chemical microscopy and differential thermal analysis. For Chemical Technology and Liberal Arts "Chemical Model" students. **3 Class Hours, 6 Laboratory Hours**

Prerequisite: 1 full year of College General Chemistry and MAT 142 Applied Calculus I and PHY 142 Physics

CHM 271 Chemical Processes 5 Credits

Material and energy balances along with applied chemical and physical principles as they apply to chemical engineering unit operations. Emphasis on problem-solving in the classroom and engineering reports in the laboratory.

3 Class Hours, 4 Laboratory Hours
Prerequisite: 1 full year of General Chemistry and MAT 142 Applied Calculus I and PHY 142 Physics

CHM 272 Chemical Processes 5 Credits

Staged operations dealing with phase equilibrium. Graphical, analytical and computer methods are used to solve unit operations problems. The laboratory emphasizes engineering reports. **3 Class Hours, 4 Laboratory Hours**
Prerequisite: CHM 271 Chemical Processes

CHM 282 Chemistry for Engineering Technology 3 Credits

Specialized chemistry course for engineering technology students. Topics in general, organic, analytical chemistry. Emphasis on chemical methods, preparations and sophisticated instrumentation as practiced in modern industrial plants and research organizations. **2 Class Hours, 2 Laboratory Hours**
Prerequisite: Permission of the instructor

CHM 290 Forensic Toxicology 3 Credits

Application of the principles of forensic toxicology and the related forensic sciences within the scope of medical-legal investigation. Drug and poison analysis, examination of physical evidence and death investigation. Optional laboratory sessions will provide basic knowledge of forensic analysis utilizing microscopy, gas chromatography, thin layer chromatography and spectroscopy.

2 Class Hours, 2 Laboratory Hours
Prerequisite: CHM 149 Forensic Science or CHM 190 Forensic Police Chemistry or a semester of General Chemistry or permission of instructor

CHM 291, 292 Organic Chemistry I and II 3, 3 Credits

Nomenclature, properties of selected functional groups, mechanisms, stereochemistry, synthetic methods and spectroscopy. The laboratory stresses basic techniques of reactions, separations and isolation by classical methods as well as modern instrumental techniques. **2 Class Hours, 3 Laboratory Hours each**
Prerequisites: CHM 146 Chemistry for CHM 291
CHM 291 Organic Chemistry I for CHM 292

CHM 293 Analytical-Instrumental Chemistry I 3 Credits

Classical analytical chemistry—sampling, statistics, gravimetric and volumetric analysis. Introduction to electrochemistry.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 146 General Chemistry

CHM 294 Analytical-Instrumental Chemistry II 3 Credits

Continuation of CHM 293 Analytical-Instrumental Chemistry I.

Additional electrochemistry and electrochemical techniques. Emphasis on spectroscopic and chromatographic methods. Visible, infrared and nuclear magnetic resonance spectroscopy. Gas liquid, column and thin layer chromatography. **2 Class Hours, 3 Laboratory Hours**
Prerequisite: CHM 293 Analytical-Instrumental Chemistry I

CHM 295 Seminar 1-3 Credits

Seminars given by faculty, students and others on special topics in various branches of chemistry. **Prerequisite: Departmental approval**

CHM 296 Advanced Instrumental Chemistry 3 Credits

Special topics in instrumental analysis. Electronics through linear and digital integrated circuits, noise, servo systems, optics, current problems in instrumental methods such as micro, trace and rapid analysis, separations and interferences.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CHM 294 Analytical-Instrumental Chemistry II

CHM 297 Qualitative Organic Analysis 2 Credits

Identification and separation of simple organic compounds and mixtures using physical and chemical methods. Interpretation of ultraviolet, infrared and nuclear magnetic resonance spectra. **1 Class Hour, 3 Laboratory Hours**
Prerequisite: CHM 292 Organic Chemistry II

CHM 298 Chemical Process Design 3 Credits

Process and instruments employed in the chemical industry. Emphasis on defining the problem, process design principle and the technology and equipment to specify the process. Comprehensive view of the concept of the unit operations and chemical kinetics. **3 Class Hours**
Prerequisite: MAT 139 Algebra and CHM 195/196 General Chemistry

CHM 299 Independent Project 2-4 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.
Prerequisite: Departmental approval

Civil Technology Dept.

CIV 111 Surveying I 4 Credits

Plane surveying including distance measurement, note keeping, compass surveying, leveling, angle measurement, care and use of instruments, stadia, record searching, deed descriptions, traversing, coordinates, area computation.

2 Class Hours, 6 Laboratory Hours
Corequisite: MAT 141 College Algebra and Trignometry

CIV 112 Surveying II 2 Credits

Continuation of CIV III Surveying I. Triangulation, precise leveling, astronomical observations, public land surveys. **1 Class Hour, 3 Laboratory Hours**
Prerequisite: CIV III Surveying I

CIV 117 Architectural Drafting I 2 Credits

Development of architectural drawings for residential construction. Floor plans, elevations, sections, details, plumbing and electrical layouts, plot plan.
1 Class Hour, 3 Laboratory Hours

CIV 118 Architectural Drafting II 2 Credits

Development of a complete set of architectural working drawings of a two-story commercial building. First and second floor plans, foundation plan, elevations, transverse section, stair detail, plumbing and electrical layouts, schedules, dimensions, notes. **1 Class Hour, 3 Laboratory Hours**
Prerequisite: CIV 117 Architectural Drafting I

CIV 124 Mechanics (Statics) 3 Credits

Static force systems and equilibrium. Free body diagrams, trusses, graphic static, spatial force systems, friction, centroids, moments of inertia.

3 Class Hours
Prerequisite: PHY 141 Physics

CIV 151 Blueprint Reading 3 Credits

Building plans, architectural, structural, mechanical and electrical. Plans studied are residential and commercial examples. (May *not* be used as a degree technical elective.) **2 Class Hours, 2 Laboratory Hours**

CIV 153 Construction Surveying 3 Credits

A basic course. Distance measurement, note keeping, leveling, angle measurement, care and use of instruments, stadia, basic traversing and areas. Building stakeout, sewer stakeout and line and grade procedures required in various types of construction. Basic mathematics included. (May not be used for a degree technical elective). **2 Class Hours, 3 Laboratory Hours**

CIV 155 Surveying 3 Credits

Plane surveying including distance measurement, note keeping, compass surveying, leveling, angle measurement, care and use of instruments, stadia, traversing, coordinates, area computation, mapping and records.

2 Class Hours, 3 Laboratory Hours
Prerequisites: MAT 139 Algebra and MAT 140 Trigonometry or MAT 141 College Algebra and Trigonometry

CIV 156 Route Surveying 4 Credits

Horizontal and vertical curves, spirals, sight distances and earthwork. Introduction to computer applications. Laboratory includes problem sessions using the college's computer to solve coordinate geometric problems.

3 Class Hours, 2 Laboratory Hours
Prerequisite: CIV 155 Surveying

CIV 158 Highway Drawing 3 Credits

Introductory course in the basics of inking highway drawings on mylar and linen. Line work, dimensioning, scaling, care and use of equipment, techniques, orthographic projection, symbols, lettering by LeRoy, accuracy and speed, lighting, neatness and an introduction to pencil drawings. Actual examples of plans, profiles, typical sections, structures and ROW maps are used in developing skills. **2 Class Hours, 2 Laboratory Hours**

CIV 159 Architectural Drawing I 3 Credits

Development of working drawings for use in residential type construction. Plot plans, floor plans, elevations, details, mechanical and electrical layouts. Lectures to include construction materials, specifications and methods.

2 Class Hours, 3 Laboratory Hours

CIV 160 Architectural Drawing II 3 Credits

A continuation of CIV 159 Architectural Drawing I. Development of working drawings for two-story and split-level residences.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CIV 159 Architectural Drawing I or permission of instructor

CIV 161 Architectural Drawing III 3 Credits

Development of a set of working drawings for a small two-story commercial building including floor plans, elevations, sections, details, mechanical and electrical layouts, window and door schedules. Term project.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CIV 160 Architectural Drawing II

Civil Technology student operating an electronic distance-measuring device (EDM) in a surveying exercise.

CIV 163 Plain Concrete 2 Credits

Cements, aggregates and plain concrete, including the testing of cements and aggregates, the design mixing, testing, placing, curing control and inspection of plain concrete. ASTM and AASHO standards. **2 Class Hours**

CIV 212 Route Surveying and Photogrammetry 4 Credits

Route Surveying: Simple and compound curves, vertical curves, spirals and earthwork. Selected topics in route selection field technique and route design. Computer applications (COGO).

Photogrammetry: Basic optics, geometry of aerial photography, flight planning, ground control, stereoscopy and parallax, stereo pairs, mosaics and plotting instruments. **3 Class Hours, 3 Laboratory Hours**

Prerequisite: CIV 111 Surveying I

CIV 215 Strength of Materials 4 Credits

Concepts of stress and strain. Simple stress, strain, torsion, shear and moment, stresses in beams, beam deflections, statically indeterminate beams, composite members, columns, combined stresses. **4 Class Hours**

Prerequisite: CIV 124 Mechanics (Statics)

CIV 217 Materials Testing 3 Credits

Basic construction materials and their testing. Materials: steel, wood, concrete, bituminous compounds. Testing uses tension, compression, shear and bending. Concrete is emphasized including cements, aggregates, additives, concrete mix design, placing, curing, forms, inspection. Testing conforms to ASTM and AASHO standards. **2 Class Hours, 3 Laboratory Hours**

Prerequisite: CIV 118 Architectural Drafting II

CIV 224 Reinforced Concrete Design 3 Credits

Fundamental behavior of reinforced concrete. Design, analysis and detailing of rectangular beams, T-beams, beams reinforced for compression, columns and footings. Emphasis on ultimate strength design methods. An integrated design and detailing project. **2 Class Hours, 3 Laboratory Hours**

Prerequisite: CIV 215 Strength of Materials

CIV 226 Structural Steel Design 3 Credits

Fundamental theory and principles necessary for design of simple steel structures. Design, investigation and detailing of beams, columns, tension and compression members and their connections. Composite beams. An integrated design and detailing project. **2 Class Hours, 3 Laboratory Hours**

Prerequisite: CIV 215 Strength of Materials

CIV 228 Estimating and Construction Planning 3 Credits

A systematic approach to estimating building project costs combined with a study of construction management and the critical path method of scheduling.

2 Class Hours, 2 Laboratory Hours

CIV 230 Building Methods and Materials 3 Credits

A survey of methods and materials used in modern building construction. Excavation, concrete, masonry, stone, steel framing, ornamental steel, wood, roofing, waterproofing, steel decks and siding, windows, doors, glass lath and painting, gypsum drywall, insulation. **3 Class Hours**

CIV 231 Estimating and Construction Planning 3 Credits

A systematic approach to estimating building project costs combined with a study of the critical path method of scheduling.

2 Class Hours, 3 Laboratory Hours

Prerequisite: CIV 118 Architectural Drafting II

CIV 234 Building Design 3 Credits

Design and detailing of an institutional type building including preliminary plans and a set of working drawings. Emphasis on individual creativity. Building materials, manufacturing processes, construction methods. Semester project.

2 Class Hours, 3 Laboratory Hours

Prerequisite: CIV 118 Architectural Drafting II

CIV 235 Hydraulics 4 Credits

Hydraulics including properties of fluids, hydrostatics, fluid motion in or through. Orifices, nozzles, pipes, weirs, open channels, hydraulic machinery, pipe branches and networks. **3 Class Hours, 3 Laboratory Hours**

Prerequisite: CIV 124 Mechanics (Statics)

CIV 236 Construction Management 3 Credits

Principles of construction management, specification writing, with emphasis on planning, building, scheduling and controlling a project.

3 Class Hours

Prerequisite: CIV 231 Estimating & Construction Planning

CIV 240 Soil Mechanics 3 Credits

Soil origin and nature, soil density, test borings, gradation compaction, soil water, frost in soil, classification, stress, retaining walls, shear strength, bearing capacity, piles. The laboratory covers ASTM and AASHO specifications used in classifying and predicting behavior of soils.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CIV 215 Strength of Materials

CIV 244 Environmental Sanitation 3 Credits

Population studies, water supply, transportation, distribution and treatment. Sewage collection and treatment, unit operations. Communicable diseases, biological and chemical aspects of water and sewage. Refuse sanitation, air pollution, industrial wastes, radioactivity. **3 Class Hours**
Prerequisite: CIV 235 Hydraulics

CIV 251 Elementary Structural Analysis I 3 Credits

Introduction of structural analysis. Reactions, shear and moment diagrams, truss analysis, graphic statics, influence lines, moving loads, approximate analysis of indeterminate structures, deflections. **3 Class Hours**
Prerequisite: MET 235 Strength of Materials

CIV 252 Elementary Structural Analysis II 3 Credits

Continuation of CIV 251 Elementary Structural Analysis I. Deflections, indeterminate beams and frames, Castigliano's theorems, three moment equations, slope deflections, moment distribution, column analogy and plastic analysis. Computer applications. **3 Class Hours**
Prerequisite: CIV 251 Elementary Structural Analysis I

CIV 255 Reinforced Concrete Design 3 Credits

Fundamental behavior of reinforced concrete. Design and analyses of rectangular beams, T-beams, beams reinforced for compression, columns and footings. Major emphasis on ultimate strength design methods. **3 Class Hours**
Prerequisite: MET 235 Strength of Materials

CIV 257 Structural Steel Design 3 Credits

Fundamental theory and principles necessary for design of simple steel structures. Design and analysis of beams, columns, tension members, compression members and their connections. Composite beams, framing systems, loads and forces. **3 Class Hours**
Prerequisite: MET 235 Strength of Materials

CIV 260 Environmental Sanitation 4 Credits

Communicable diseases, water requirements and waste volumes, water supplies, transportation and distribution of water, chemical and biological aspects. Water treatment, waste water treatment including biological and physical treatments. Individual systems and air pollution. **4 Class Hours**

CIV 262 Soil Mechanics 4 Credits

Origin and nature of soil, soil physics, sampling soil water, flow nets and seepage forces, classification, frost action, stability, embankments, dams, retaining walls, piers, piles and underground conduits. **4 Class Hours**
Prerequisite: MET 235 Strength of Materials or permission of instructor

CIV 264 Photogrammetry 4 Credits

Fundamentals of photogrammetry. Cameras, film, distortions, corrections. Photographic geometry, rectification, flight planning, ground control. Triangulation, stereoscopy and parallax, photogrammetric model orientation, mosaics and orthophotos, plotting instruments. Applications include civil engineering problems such as highways, dams, reservoirs, power line locations, property mapping.

4 Class Hours

CIV 266 Hydraulics 3 Credits

A basic course in theory and practical applications of hydraulics. Properties of fluids, measurements, hydrostatics, dynamic problems of both pipe and open channel flow. Application and limitations of some of the design aids in common use.

3 Class Hours

Prerequisite: MET 132 Applied Mechanics

CIV 268 Engineering Economics 2 Credits

Use of compound interest in financing and in determining engineering cost comparisons. Introduction to depreciation methods. Illustrative cases and problems (personal and engineering) including New York State Professional Engineering Examination problems.

2 Class Hours

Prerequisite: MAT 139 Algebra or equivalent

CIV 270 Highway Design 3 Credits

Phases of highway design in sequence from initiation to final design. Classification of highways, criteria and controls for both horizontal and vertical alignment, typical section, cost estimate, and other features associated with design. A broad review of the scope and content of final plans, specifications and engineers estimate.

3 Class Hours

Prerequisite: CIV 155 Surveying and CIV 156 Route Surveying or permission of instructor

CIV 299 Independent Study 2-4 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.

Electrical Technology

EET 101 Fundamentals of Electricity and Electronics 3 Credits

Fundamental course in the principles of electricity and electronics with minimal mathematics treatment. Applications-oriented, relating mainly to everyday uses in the home and automobile. Laboratory includes proper wiring practices, proper use of instruments and student projects. For non-electrical students.

2 Class Hours, 2 Laboratory Hours

EET 111 Electrical Construction Laboratory I 2 Credits

Basic knowledge about today's electrical equipment. Experience in the installation, fabrication and maintenance of electrical equipment by means of "hands-on" approach. Shop safety and the National Electrical Code. Basic residential and commercial wiring procedures, basic measuring techniques, fundamentals of basic machine operations.

1 Class Hour, 3 Laboratory Hours

EET 112 Electrical Construction Laboratory II 1 Credit

Advanced wiring methods, fractional horsepower motor and appliance troubleshooting, introduction to residential and commercial lighting and power layout-design. **3 Laboratory Hours**

Prerequisite: EET 111 Electrical Construction Laboratory I

EET 121 Electrical Circuits 5 Credits

Fundamentals of electrical circuits and application of circuit laws, theorems and measuring techniques to both d-c and a-c circuits. Basic three-phase systems.

4 Class Hours, 3 Laboratory Hours

EET 125 Circuits I 3 Credits

A correlation of basic concepts of d-c circuits directly related to the electrical and electronic sequence including network theorems.

2 Class Hours, 2 Laboratory Hours

Prerequisite: MAT 139 Algebra or equivalent.

Student may take MAT 139 concurrently with this course

EET 126 Circuits II 3 Credits

A continuation of the study of circuits concepts related to single and three-phase alternating current. Resonance, network analysis power.

2 Class Hours, 2 Laboratory Hours

Prerequisites: MAT 140 Trigonometry or equivalent and EET 125.

Student may take MAT 140 concurrently with this course

EET 130 Engineering Drawing 1 Credit

Principles of projection. Development of drafting skills, lettering and proper line construction. Dimensioning and tolerancing, with an emphasis on shop processes. Use of auxiliary views and sectioning. Preparation of assembly drawings, materials lists, schematic and wiring diagrams. **3 Laboratory Hours**

EET 150 Electronics I 5 Credits

Principles of resonance, inductive coupling, transformers, RL and RC time constants, rectification. Characteristics of electronic devices including diodes, bipolar transistors, field effect transistors, tubes, unijunction transistors, thyristors and special purpose devices. Biasing techniques, load line analysis, rule-of-thumb design, hybrid parameters. **4 Class Hours, 3 Laboratory Hours**

Prerequisites: MAT 141 College Algebra and Trigonometry and EET 121 Electrical Circuits

EET 185 Electricity 3 Credits

Open to interested students. Practical applications of electrical concepts as applied to basic d-c and a-c circuitry, motors, alternators, energy sources and protection equipment. Laboratory work includes demonstration of concepts by students; operation of common electrical measuring instruments such as multimeters, oscilloscopes, wattmeters and bridges; operation of basic a-c motor starters; use and operation of sensors or transducers to measure physical parameters as force, pressure, temperature. **2 Class Hours, 2 Laboratory Hours**

Prerequisites: PHY 142 Physics (Electricity and Magnetism) and MAT 141 College Algebra and Trigonometry or permission of instructor.

EET 186 Electronics 3 Credits

Open to interested students. Practical applications of electronic concepts as applied to solid state devices, amplifiers, power supplies, oscillators, multivibrators, modulators and basic logic devices. Laboratory work includes demonstration of concepts by students; operation of common electronic instruments such as curve tracer, function generator, and counter; use and operation of sensors to measure physical parameters such as motion and displacement.

2 Class Hours, 2 Laboratory Hours
Prerequisite: EET 185 Electricity or permission of instructor

EET 230 Electronic Design and Fabrication 1 Credit

Selection, design and construction of an electronic project and preparation of related drawings. Use of various manufacturing processes to fabricate the project. Use of industrial standard drafting practices to properly describe the operations. Chassis layout, printed circuit board design and etch, wiring, soldering, enclosure.

3 Laboratory Hours
Prerequisites: EET 150 Electronics I, EET 130 Engineering Drawing and EET 112 Electrical Construction Laboratory II

EET 241 Electrical Machines and Controls I 4 Credits

Theory, operation and application of d-c machines, and their magnetic and solid state control. Theory and application of single and polyphase power transformers and rectifiers.

3 Class Hours, 3 Laboratory Hours
Prerequisite: EET 150 Electronics I

EET 242 Electrical Machines and Controls II 5 Credits

Generation and use of three-phase power. Theory, operation and application of a-c motors and controls. Principles of open and closed loop systems. Theory, operation, application of industrial equipment used in control systems.

4 Class Hours, 3 Laboratory Hours
Prerequisite: EET 241 Eectrical Machines and Controls I

EET 245 Electrical Machines 4 Credits

D-c and a-c machine theory, application and control. Single phase and polyphase transformers, solid state rectification.

3 Class Hours, 2 Laboratory Hours
Prerequisite: EET 126 Circuits II

EET 251 Electronics II 4 Credits

Basic configurations of active devices, equivalent circuits, performance predictions, frequency response, Bode plots, negative feedback, operational amplifiers, integrated circuits.

3 Class Hours, 3 Laboratory Hours
Prerequisite: EET 150 Electronics I

EET 252 Electronics II 4 Credits

Passive and active waveshaping, non-sinusoidal oscillators, sinusoidal oscillators, active filters, large signal amplifiers, regulated power supplies, elements of communications systems.

3 Class Hours, 3 Laboratory Hours
Prerequisite: EET 251 Electronics II

EET 255 Electronics I 4 Credits

Solid state devices with vacuum tubes and gas devices as supplement. Diodes (Ge, Si, vacuum gas), rectifier circuits (half/full wave), trigger diode, tunnel diode, LED and displays, unijunction transistor, SCR and Triac, bipolar transistor, basic bipolar biasing with rules of thumb, 575 curve tracer (characteristic curves), load line analysis, field effect transistors, triode curves, and h-parameter introduction (575). Laboratory emphasizes proper selection and use of test instruments.

3 Class Hours, 2 Laboratory Hours
Prerequisite: EET 126 Circuits II2

EET 256 Electronics II 4 Credits

Small signal amplifiers—rule of thumb design, basic transistor, voltage divider bias, feedback bias, Darlington, differential pair, direct coupled, d-c a-c analysis, Q-point prediction, h-parameter equivalent circuit use, prediction of voltage, current and power gain by h-parameters and load line, measurements of input and output impedance. Vacuum triode equivalent and predictions.

3 Class Hours, 2 Laboratory Hours
Prerequisite: EET 255 Electronics I

EET 257 Electronics III 4 Credits

Special amplifiers, oscillators and large signal amplifiers—differential amplifier, operational amplifier (characteristics, summer, integrator, differentiator, difference amplifier, active filters), sinusoidal oscillators, multivibrators (astable, bistable, monostable), Schmitt trigger, diode clippers and clampers, RC hi/lo pass circuits, large signal amplifiers (Class A, RC, Class A transformer coupled, Class AB push-pull, Class B, C).

3 Class Hours, 2 Laboratory Hours
Prerequisite: EET 256 Electronics II

EET 258 Electronics IV 4 Credits

Electronic systems design. Power supplies—regulated (zener/transistor), operational amplifier regulators, logic design—logic gates, Boolean expressions, DeMorgan's theorem, digital black box design and simplification, TTL circuit design, flip-flop counter, NAND/NOR gate implementation, RTL circuitry (single shot, astable multivibrator) and mapping. Fundamentals of communication circuits.

3 Class Hours, 2 Laboratory Hours
Prerequisite: EET 257 Electronics III

Electrical Technology student working on an electrical wiring assignment in the Electrical Construction Laboratory.

EET 261 Network Analysis 3 Credits

Analysis of complex electrical and electronic networks by the application of Kirchhoff's Laws, Thevenin's and Norton's theorems, superposition theorem, loop and nodal analysis, and transfer function techniques. Use of Laplace transform analysis and matrix methods for the solution of linear equations. The computer is used as an analytical tool where feasible. **3 Class Hours**

Prerequisite: EET 150 Electronics I

EET 266 Analog and Digital Circuits 4 Credits

Construction of the analog computer in the areas of system simulation and problem solution. Use of electronic circuitry to solve mathematical problems. Digital computer hardware and number systems. Building blocks, sub-system and system operations. Construction and use of monolithic integrated circuits including applications and limitations of available families. Periodical exercises and demonstrations. **3 Class Hours, 2 Laboratory Hours**

Prerequisite: EET 150 Electronics I

EET 299 Independent Study 2-4 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.

Prerequisite: Departmental Approval

Engineering Science and Physics Dept.

Engineering

EGR 110 Introduction to Technologies ½ Credit

Introduction to the college and its policies, placement, transfer and study skills. Use of scientific calculators. For engineering technology freshmen.

1 Class Hour

EGR 130 Professional Engineers Review Course 4 Credits

For those qualified who plan to take the New York State Licensing Examination. New requirements for the National Examination. Physics, statics, dynamics, mechanics of materials, electrical theory, economic analysis, mathematics, fluid mechanics and thermodynamics. Chemical, civil, electrical and mechanical engineering problems. This course can also serve as a guide for elf-study for any engineer who wishes to review the broad subject areas in engineering. This is a 27-week course. **2½ Laboratory Hours**

EGR 271 Mechanics 4 Credits

Through vector calculus, development of concepts of forces, moments, couples, vectors in curvilinear coordinate systems. Particle motion, particle dynamics, harmonic forces, force fields, the two-body problem. Relative motion, dynamics of plane systems, impulse-momentum theorems and energy theorems for the rigid body. **4 Class Hours**

EGR 274 Electrical and Electronic Circuits 4 Credits

Units, Coulomb's Law, Ohm's Law, Faraday's Law, Kirchoff's Law, Ampere's Law, energy and power. Resistance, inductance and capacitance parameters. Series and parallel circuits, superposition theorem, network analysis by mesh currents, nodal techniques, Thevenin's Theorem, Norton's Theorem, network reduction The Laplace transform for solving step response, pulse response, forced response, natural response and complete response. A-c circuits, phasors, impedances, resonance, balanced three-phase circuits. Fourier Series. Transistor and tube parameters, linear equivalent circuits, biasing methods. Single, double and triple amplifier response in terms of gain, bandpass. Coupling techniques, integrated circuits, modulation, logic circuits. **4 Class Hours**

EGR 277 Engineering Science Laboratory I 2 Credits

Experimentation in mechanics, thermodynamics, electricity and magnetism, sound and light. Many of the experiments, but not all, as independent projects.

1 Class Hours, 3 Laboratory Hours
Prerequisite: PHY 172 Physics
Corequisite: PHY 271 Physics (Electricity and Magnetism)

EGR 278 Engineering Science Laboratory II 2 Credits

Experimentation in electrical circuits and atomic and nuclear physics. Many of the experiments, but not all, as independent projects.

1 Class Hour, 3 Laboratory Hours
Prerequisite: PHY 271 Physics (Electricity and Magnetism) and EGR 277
Corequisites: PHY 272 Physics (Modern) and EGR 274 Electrical and Electronic Circuits

EGR 299 Independent Project 2-4 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.

Physical Science

PHS 111 Physical Science for Today 3 Credits

Beginnings of astronomy, the earth and moon, planets and satellites, the sun and other stars, cosmology. Chemistry of our atmosphere, weather and methods of modification, water cycle and pollution. Composition of the earth's crust, erosional processes, earthquakes and volcanoes, plate tectonics, nuclear radiation, man and his environment. Required field trips supplement classroom experience.

2 Class Hours, 2 Laboratory Hours

PHS 112 General Physical Science 2 Credits

Beginnings of astronomy, the earth and moon, planets and satellites, the sun and other stars, cosmology. Chemistry of our atmosphere, weather and methods of modification, water cycle and pollution. Composition of the earth's crust, erosional processes, earthquakes and volcanoes, plate tectonics, nuclear radiation, mankind and environment. **1 Class Hour, 2 Laboratory Hours**

PHS 113 Physical Science—Astronomy 4 Credits

The Copernican and Ptolemaic models of the solar system. The planets, sun, moon and comets. Stellar magnitudes and evolution of stars. The size and age of the universe and modern developments in astronomy and cosmology. Required field trips supplement classroom experience. **3 Class Hours, 3 Laboratory Hours**

PHS 115 Physical Science—Geology 4 Credits

Crystals, minerals, rocks—their structure and identification. Erosion of the crust, its uplift and deformation. Earthquakes and the interior of the earth, geologic dating and the physical history of the earth. Plate tectonics and continental drift, ecology from a geologic viewpoint. Required field trips supplement classroom experience. **3 Class Hours, 3 Laboratory Hours**

PHS 116 Physical Science—Environment 4 Credits

Basic physical principles and the role of these principles in understanding and appreciating the problems of the environment. Problems of pollution and depletion of natural resources. Application of physics in the every-day world. Required field trips supplement classroom experience. **3 Class Hours, 3 Laboratory Hours**

Students in a Physical Science class launching a model rocket to demonstrate the application of some of the basic laws of physics.

PHS 131 Astronomy (Physical Science) 1 Credit

Historical sketch, earth and moon, tools and methods of the astronomer, planets and satellites, comets and meteors, the sun, constellations, stellar distances, stellar spectra. Hertsprung-Russell diagram, variety among stars, galaxies and cosmology. This is a 5-week course. **3 Class Hours**

PHS 132 Geology (Physical Science) 1 Credit

Composition of the earth's crust, igneous rocks, sedimentary rocks, metamorphic rocks, erosion, glaciers, ground water, earthquakes, continents, oceans, geologic dating. This is a 5-week course. **3 Class Hours**

PHY 133 Meteorology (Physical Science) 1 Credit

Properties of the atmosphere, heat energy, thermal circulation, effect of the earth's rotation, frictional drag, vertical stability, cyclones, anticyclones, monsoons, thunderstorms, air masses, tornadoes, climate, weather forecasting. This is a 5-week course. **3 Class Hours**

Physics

PHY 100, 101 Preparatory Physics I and II 4, 4 Credits

Composition and resolution of vectors. Statics and dynamics. Conservation laws, wave motion, sound and light. Thermodynamics, electricity and magnetism. The physics of the atom. **4 Class Hours each**

PHY 116 Physics 3 Credits

Vectors, linear motion, energy, momentum, electric fields, potential difference, Ohm's law, d-c circuits, motion of charges in magnetic fields, electromagnetic induction. Mirrors and lenses, nature of light, atomic structure, production of X-rays, radioactive decay, nuclear reactions, interaction of radiation with matter, radiation detection, radiation protection standards.

2 Class Hours, 2 Laboratory Hours

PHY 141 Physics 4 Credits

Composition and resolution of vectors, forces in equilibrium, moments of forces, elasticity, linear and projectile motion, forces and motion, rotation, work and energy, impulse and momentum, harmonic motion, fluid mechanics, temperature, thermal expansion, heat. For Engineering Technology students.

3 Class Hours, 2 Laboratory Hours

PHY 142 Physics 4 Credits

Thermodynamics, thermal properties of gases, wave motion and sound, electrostatics, direct current, magnetism, electromagnetic induction, alternating current, electromagnetic radiation, illumination, reflection and refraction of light, mirrors and lenses, optical instruments, diffraction. For Engineering Technology students. **3 Class Hours, 2 Laboratory Hours**

Prerequisite: PHY 141 Physics

PHY 161 Physics 4 Credits

Structure and language of physics, physical and chemical behavior of matter, concepts and measurement of length, time and mass. Vectors and vector algebra, motion and relativity. Dynamics and energy—Newton's Laws, impulse and momentum, conservation of energy, kinetic theory, heat and energy, thermodynamics. First course in an introductory non-calculus sequence. For Liberal Arts students who need a laboratory science. **3 Class Hours, 3 Laboratory Hours**

PHY 162 Physics 4 Credits

Wave phenomena-vibrations, simple harmonic motion, interference, sound, light, optics. Electricity and magnetism—electrostatics, electrical circuits, electromagnetic phenomena. Modern physics—quantum theory, atomic structure, radioactivity. Second half of introductory physics course for Liberal Arts students.

3 Class Hours, 3 Laboratory Hours

Prerequisite: PHY 161 Physics

PHY 172 Physics 4 Credits

Vectors, particle kinematics and dynamics, Newton's laws of motion, centripetal force, work and energy, impulse and momentum, rotational kinematics and dynamics, oscillations, gravitation, fluid statics and dynamics, wave motion, temperature, calorimetry, heat transfer, elementary thermodynamics and kinetic theory. **4 Class Hours**

Prerequisite: MAT 171 Engineering Calculus with Analytic Geometry

PHY 271 Physics (Electricity and Magnetism) 4 Credits

Fundamental laws of electric and magnetic fields with application to elementary circuit problems. Electrostatic fields, induced emfs, inductance, capacitance, dielectrics, steady currents, simple transients. Wave motion as applied to sound and acoustical phenomena. Geometrical optics, optical parts, optical instrumentation. Physical optics, nature of light, interferometry, polarization of light. **4 Class Hours**

Prerequisites: PHY 172 Physics and 1 Year of Calculus

PHY 272 Physics (Modern) 4 Credits

Special theory of relativity, quantum description of waves and particles, Bohr's theory of atomic structure, Schroedinger's equation, quantization of angular momenta, atomic spectra, nuclear radiation detection instruments, high-energy accelerators, nuclear force, binding energy of stable nuclei, radioactive decay, low-energy nuclear reactions, neutrons, fission, fusion. **4 Class Hours**

Prerequisites: PHY 271 Physics and 1 Year of Calculus

Mathematics Dept.

MAT 101 Core Mathematics 4 Credits*

Addition, subtraction, multiplication and division of whole numbers, fractions and decimals, ratio and percent, simple geometric constructions and measurements. **4 Class Hours**

MAT 102 Career Mathematics with Technical Option 4 Credits*

Elementary algebra including solutions of systems of linear equations by determinants and solution of quadratic equations. Graphing of simple functions and equations. Elementary geometry of angles, triangles and circles. Solution of problems in right angle trigonometry and resolution of vectors.

4 Class Hours

Prerequisite: MAT 101 Core Mathematics or Equivalent

MAT 103 Elementary Algebra 4 Credits*

Fundamental algebraic operations, solution of linear and quadratic equations, the rectangular coordinate system and graphing, solving pairs of equations algebraically and graphically. Metric units of measure.

4 Class Hours

Prerequisite: MAT 101 Core Mathematics or Equivalent

MAT 105 Career Mathematics With Business Option 4 Credits*

Fundamental algebraic operations, solution of linear and quadratic equations, solution of systems of two linear equations in two unknowns algebraically and graphically. Percent, ratio and proportion, intuitive plane geometry of polygons and circles, measurement conversion, tabulation and graphing of data, mean, median and mode. **4 Class Hours**

Prerequisite: MAT 101 Core Mathematics or Equivalent

***THE AMOUNT OF CREDIT granted for these courses depends upon division/department policy. See the division dean or deparment chairman to answer questions.**

MAT 108 Career Mathematics With Health Science Option 3 Credits

Fundamental algebraic operations, solution of linear and quadratic equations, solution of systems of two linear equations in two unknowns algebraically and graphically. Percent, ratio and proportion, scale reading and measurement conversion, logarithms, tabulation and graphing of data, mean, median and mode, rudiments of trigonometry. Metric units of measure. **3 Class Hours**

Prerequisite: MAT 101 Core Mathematics or Equivalent

MAT 110 Metrics 2 Credits

Conversion from British to metric units (The International System) and vice versa. Estimation in metric units without conversion. Relation of metric prefixes to multiples and submultiples of a metric unit. Use of metric instruments of measure. Development of projects to teach metric thinking at elementary grade levels. For elementary education students and teachers. **2 Class Hours**

Prerequisite: MAT 101 Core Mathematics or Equivalent

MAT 111 Mathematics, A Liberal Art I 3 Credits

Introduction to the variety and structural beauty of mathematics. Inductive and deductive reasoning, games and number theory, functions and their graphs, large numbers, exponents and logarithms, geometric patterns and symmetry. For Liberal Arts students—recommended for fine arts or humanities majors. Metric units of measure. **3 Class Hours**

Prerequisite: MAT 103 Elementary Algebra or Equivalent

MAT 112 Mathematics, A Liberal Art II 3 Credits

Introduction to the variety and structural beauty of mathematics. Mathematical curves in nature and science, combinations, permutations and probability, statistics, statistical graphs, misleading uses of statistics, topology and networks. For Liberal Arts students—recommended for fine arts and humanities majors. **3 Class Hours**

Prerequisite: MAT 111 Mathematics, A Liberal Art I or MAT 103 Elementary Algebra or Equivalent

MAT 121 Finite Mathematics 3 Credits

Sets and logic, permutations, combinations and probability, vectors and matrices, inequalities and linear programming. The computer language BASIC is taught and used. **3 Class Hours**

Prerequisite: MAT 102 or MAT 105 or MAT 108 Career Mathematics

MAT 122 Introduction to Calculus 3 Credits

Analytic geometry of line, circle and parabola. Functions and their graphs. Limits and continuity, differentiation—rules and applications, integration—techniques and applications. Exponential and logarithmic functions and applications. Recommended for social science, health science and business students. Not for math majors or science majors in the A.S. degree program. **3 Class Hours**

Prerequisite: MAT 121 Finite Mathematics or MAT 139 Algebra or Equivalent

MAT 123 Basic Statistics 2 Credits

Elementary statistics course covering concepts of frequency distributions, measures of central tendency and dispersion, hypothesis testing, regression and correlation analysis. Some topics in elementary probability. **2 Class Hours**

Prerequisite: MAT 101 Core Mathematics or Equivalent

MAT 124 Statistics 3 Credits

Descriptive statistics, organization and presentation of data, measures of central tendency. Variance, standard deviation, binomial distribution, statistical inference. Random sampling, hypothesis testing, confidence intervals, normal distribution, analysis of variance. Chi-square distribution, students t-distribution, correlation and regression. **3 Class Hours**

Prerequisite: MAT 103 Elementary Algebra or Equivalent

MAT 126 Computers in Society 3 Credits

The computer language BASIC is taught. Introduction to the numeric and literal capabilities of the computer. Student may choose from a wide variety of projects to program or work on approved projects. Impact of computers on society. Applications of computing in government, education, medicine, space exploration, war; automation and privacy; unemployment and leisure. (Credit will not be given for both MAT 121 and MAT 126. Students should therefore choose one or the other). **2 Class Hours, 2 Laboratory Hours**

Prerequisite: MAT 103 Elementary Algebra or Equivalent

MAT 131 Modern Basic Mathematics I 3 Credits

Basic set operations. Properties of the operations of multiplication and addition for the sets of natural numbers, integers and rational numbers. Modular systems and bases other than base ten. For Liberal Arts students—recommended for elementary education majors. **3 Class Hours**

Prerequisite: MAT 103 Elementary Algebra or Equivalent

MAT 132 Modern Basic Mathematics II 3 Credits

Construction of polygons, polyhedra and solids. Measurements of area and volume. Transformations of plane figures. Congruent figures and measures of curves and angles. For Liberal Arts students—recommended for elementary education majors. Metric units of measure. **3 Class Hours**

Prerequisite: MAT 103 Elementary Algebra or Equivalent

MAT 139 Algebra 4 Credits

Real and complex numbers, algebraic operations, functions and graphs, exponents and logarithms, linear and quadratic equations, systems of linear equations, linear inequalities, binomial theorem. **4 Class Hours**

Prerequisite: MAT 102 Career Mathematics
or MAT 103 Elementary Algebra or Equivalent

MAT 140 Trigonometry 4 Credits

Trigonometric functions and their graphs, solution of triangles, trigonometric identities and equations, inverse trigonometric functions, position vectors, polar representation of complex numbers, DeMoivre's theorem.

4 Class Hours

Prerequisite: MAT 139 Algebra or Equivalent

MAT 141 College Algebra and Trigonometry 4 Credits

A review of algebra and trigonometry emphasizing computational skills and technical applications. Algebraic operations, functions and graphs, exponents and logarithms, linear equations, systems of linear equations and determinants. Trigonometry and the solution of triangles, trigonometric functions and their graphs, quadratic equations, vectors, complex numbers. For engineering technology students. **4 Class Hours**

MAT 142 Applied Calculus I 4 Credits

Basic analytic geometry, distance, equations of lines. Limits, continuity and the derivative. Differentiation of polynomials, maxima and minima. Differentials and approximation, applications in kinematics and circuits. The definite integral and applications to finding area, center of gravity, volume of revolution, work done. Approximate integration, differentiating products and quotients, implicit differentiation and related rates, differentation and integration of logarthmic, exponential, trigonemtric and inverse trigonometric functions.

4 Class Hours

Prerequisite: MAT 141 College Algebra and Trigonometry
or MAT 140 Trigonometry

MAT 161 Pre-Calculus Mathematics 4 Credits

The real number system, inequalities, graphing and the Cartesian Coordinate System, the algebra of functions, polynomial and rational functions, trigonometric functions, inverse functions, exponential and logarithmic functions. **4 Class Hours**

Prerequisite: MAT 139 Algebra and MAT 140 Trigonometry or Equivalent

MAT 163 Calculus With Analytic Geometry I 4 Credits

Rectangular coordinate system and an introduction to analytic geometry of lines, functions. Differentiation of algebraic functions, applications of the derivative including the theory of extremes and related rates. Integration of polynomials and area between polynomials. Conic sections. **4 Class Hours**

Prerequisite: MAT 161 Pre-Calculus Mathematics or MAT 140 Trigonometry or Equivalent

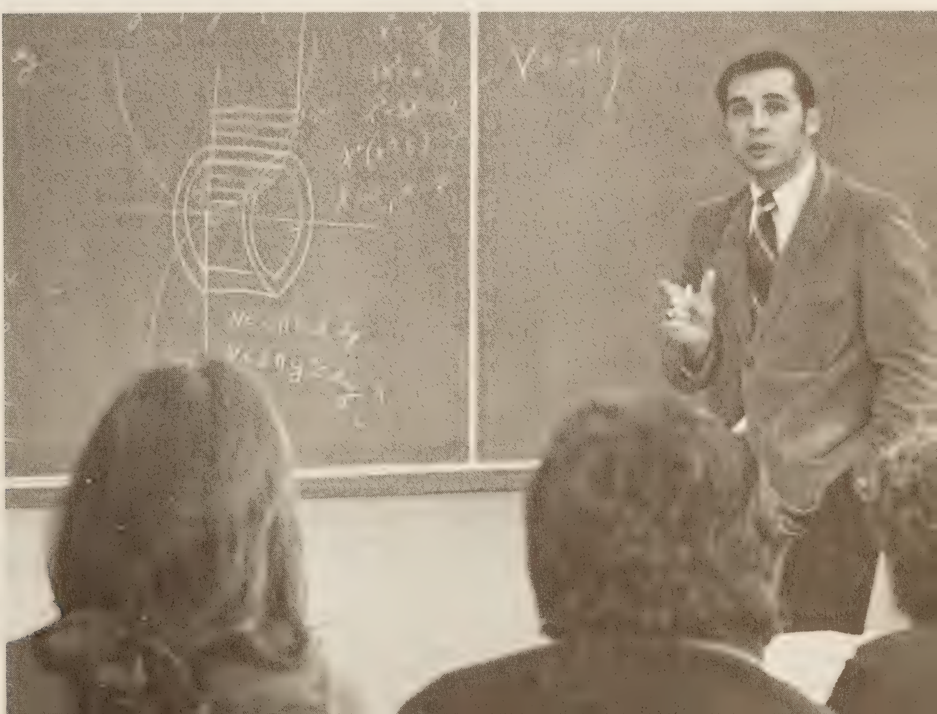
MAT 164 Calculus With Analytic Geometry II 4 Credits

Continuity, differentiation and integration of trigonometric functions and their inverses. Logarithmic and exponential functions. Differentiation of hyperbolic functions, parametric equations, polar coordinates. Techniques of integration, applications of integration including arc length, volumes of solids of revolution and center of gravity of plane figures and certain solids. **4 Class Hours**

Prerequisite: MAT 163 Calculus With Analytic Geometry I

MAT 171 Engineering Calculus With Analytic Geometry I 4 Credits

Equations of a line, rates of change, limits, continuity, derivatives of algebraic functions, applications: curve sketching, related rates, maxima and minima. Integration and applications: area, distance, volume, arc length, surface area, average value, moments, pressure, work. **4 Class Hours**



MAT 172 Engineering Calculus With Analytic Geometry II — 4 Credits

Trigonometric, logarithmic and exponential functions, methods of integration, plane analytic geometry and conic sections, hyperbolic functions, polar coordinates, vector functions and their derivatives, parametric equations.

4 Class Hours
Prerequisite: MAT 171 Engineering Calculus With Analytic Geometry I

MAT 241 Applied Calculus II — 3 Credits

Integration by substitution, by partial fractions and by parts. Improper integrals, parabola, hyperbola, ellipse and translation of axes. First and second order linear differential equations. Partial derivatives, iterated and double integrals. Polar coordinates, curve plotting and area. Sequences, series, convergence tests, power series and Fourier series.

3 Class Hours
Prerequisite: MAT 142 Applied Calculus I

MAT 243 Differential Equations — 4 Credits

Equations of order one, integrating factors, substitution method, Bernoulli's equation, linear equations of higher order with constant and undetermined coefficients, variation of parameters, inverse differential operators.

4 Class Hours
Prerequisite: MAT 241 Applied Calculus II
or MAT 164 Calculus with Analytic Geometry II

MAT 244 Laplace Transforms — 4 Credits

Application of Laplace transform methods to various problems involving ordinary and partial differential equations. Solutions by power series.

4 Class Hours
Prerequisite: MAT 243 Differential Equations

MAT 245 Vector Analysis — 4 Credits

Vector differentiation, line, surface and volume integrals, divergence theorem, Stokes' theorem, curvilinear coordinates.

4 Class Hours
Prerequisite: MAT 241 Applied Calculus II

MAT 246 Applied Linear Algebra — 4 Credits

A non-calculus study of matrices, determinants, vector spaces and linear transformations.

4 Class Hours
Prerequisite: MAT 241 Applied Calculus II

MAT 263 Calculus With Analytic Geometry III — 4 Credits

Limits and continuity, Delta epsilon proofs, indeterminate forms. Sequences, series, convergence tests, power series, Taylor's theorem. Analytic geometry and vectors in three-dimensional space including equations of lines, scalar products, vector products, equations of planes, differentiation, space curves, surfaces, cylindrical and spherical coordinates. Functions of several variables, limits, continuity, partial derivatives, tangents and normals, directional derivative, gradient, maxima and minima. Multiple integrals and applications.

4 Class Hours
Prerequisite: MAT 164 Calculus with Analytic Geometry II

MAT 264 Linear Algebra — 4 Credits

Linear equation and matrices, vector spaces, independence bases, dimension, the algebra of linear transformations and matrices, determinants, eigenvalues and eigenvectors, differential equations.

4 Class Hours
Prerequisite: MAT 263 Calculus with Analytic Geometry III
or MAT 271 Engineering Calculus with Analytic Geometry III
or MAT 241 Applied Calculus II

MAT 266 Introduction to Higher Mathematics 3 Credits

Exposure to basic mathematical methods and concepts. Sets, sequences, mappings, convergence. Preparation for analysis, topology and modern algebra.

3 Class Hours

Prerequisite: MAT 263 Calculus with Analytic Geometry III or MAT 271 Engineering Calculus with Analytic Geometry III or permission of instructor

MAT 271 Engineering Calculus With Analytic Geometry III 4 Credits

Solid geometry, lines and planes, vector calculus in space, quadric surfaces, partial differentiation, directional derivatives, gradient, line integrals, multiple integrals, infinite series, complex numbers and functions.

4 Class Hours

Prerequisite: MAT 172 Engineering Calculus with Analytic Geometry II

MAT 272 Differential Equations With Linear Algebra 4 Credits

First order differential equations. Matrices, determinants and solutions of systems of linear equations. Vector spaces, Wronskians, linear transformations and differential operations. Characteristic values and vectors, real symmetric matrices, functions of matrices. Homogeneous and nonhomogeneous linear differential equations with constant coefficients, undertermined coefficients and variations of parameters. Matrix formulation of linear systems of differential equations and solution by characteristic values, the exponential matrix function and nonhomogeneous linear systems. Series solutions of differential equations at ordinary and singular points. **4 Class Hours**

Prerequisite: MAT 271 Engineering Calculus with Analytic Geometry III or MAT 263 Calculus with Analytic Geometry III

MAT 299 Independent Project 1-4 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment **Prerequisite: Department Chairman Permission**

Mechanical Technology Dept.

MET 111 Engineering Drawing I 2 Credits

Basic course that includes lettering, line and instrument exercises, orthographic projection, sketching, dimensioning, auxiliary views, sections, threads, fasteners. **1 Class Hour, 2 Laboratory Hours**

MET 112 Engineering Drawing II 2 Credits

Fits and tolerances, developments and intersections, pictorial drawings, true position dimensioning (ANSI standards), assembly drawings and graphical design using standard industrial parts. **1 Class Hour, 2 Laboratory Hours**

Prerequisite: MET 111 Engineering Drawing I

MET 115 Graphics 2 Credits

Basic course that includes lettering, orthographic projection dimensioning, sections, auxiliary views by instrument and free hand. True length, true size, relationships between lines and planes. For Engineering Science students.

1 Class Hour, 2 Laboratory Hours

MET 121 Manufacturing Processes I 3 Credits

A basic study of manufacturing materials and processes, such as casting metal, production of ferrous and non-ferrous metals and shape changing processes of hot and cold working techniques. Oxyacetylene, arc, resistance welding. Machine tool operation, instrumentation and measurement.

2 Class Hours, 2 Laboratory Hours

MET 122 Manufacturing Processes II 2 Credits

Abrasives and grinding, indexing, gearing, special machining processes such as numerical controls and electrical discharge machining. Advanced elements of machine tool operation including the use of grinding machines, turret lathe, honing, lapping.

1 Class Hour, 3 Laboratory Hours
Prerequisite: MET 121 Manufacturing Processes I

MET 129 Survey of Engineering Laboratories 3 Credits

Engineering materials, physical tests and manufacturing processes encountered in mechanical technology laboratories. Lectures, demonstrations and participation in manufacturing processes, casting, welding and forging, metallurgy, strength of materials, fluids and thermodynamics, technical sketching and blueprint reading, scientific calculators. For Secretarial Science students.

2 Class Hours, 2 Laboratory Hours

MET 132 Applied Mechanics 4 Credits

STATICS: Free body diagram, trusses, friction, centroids, moments of inertia.

DYNAMICS: Motion of particles and bodies without consideration of the forces required to produce or maintain motion (kinematics), unbalanced forces and the motion they produce (kinetics), work and energy, impulse and momentum.

4 Class Hours
Prerequisites: PHY 141 Physics and
MAT 141 College Algebra and Trigonometry
or equivalent or department chairman approval

MET 134 Fundamentals of Stationary Engineering 3 Credits

A course in general background information in basic topics relating to power plant engineering. Primary emphasis on the operation and maintenance of boiler room equipment including steam cycling-condensing, related mathematics, boiler mountings and bracings, boiler operation, inspection and repair, chemistry of combustion and feedwater treatment. Satisfactory completion of the course is one of the requirements to qualify for the New York State Civil Service Fireman examination.

2 Class Hours, 1 Laboratory Hour

MET 152 Engineering Materials 4 Credits

Physical and chemical properties of engineering materials. Mechanical tests, structure, phases, relationship and reactions within metallic and non-metallic structure.

4 Class Hours

MET 235 Strength of Materials 3 Credits

Normal and shear stress and strain, elastic and plastic deformation, torsion, stress in thin-walled cylinders, joints, shear force and bending moment in beams, beam stresses, beam deflection, multi-directional plane stress.

2 Class Hours, 3 Laboratory Hours
Prerequisite: MET 132 Applied Mechanics

MET 238 Mechanical Design 4 Credits

An analysis of machine motion and the design of machine elements. Analysis of motion of linkages and mechanisms for displacement, velocity and acceleration relationships. Design and analysis of weldments, fasteners, springs, power screws, couplings, shafts, clutches, gears and bearings.

3 Class Hours, 3 Laboratory Hours
Prerequisite: MET 235 Strength of Materials

MET 241 Fluid Mechanics and Thermodynamics 3 Credits

FLUID MECHANICS: Fluid statics and dynamics, steady flow energy equations, laminar and turbulent flow, viscosity and fluid friction, flow measurement.

THERMODYNAMICS: Perfect gas law, specific heats, property and energy relationships in non-flow and steady flow processes for gases, internal combustion engine cycles, nozzles and diffusers, gas turbines.

2 Class Hours, 3 Laboratory Hours
Prerequisite: MET 132 Applied Mechanics

MET 244 Thermodynamics 3 Credits

Property and energy relationships in steady flow processes for vapors, power and refrigeration cycles, nozzles and diffusers. Heat transfer in plane and circular geometry, film coefficients, heat exchangers.

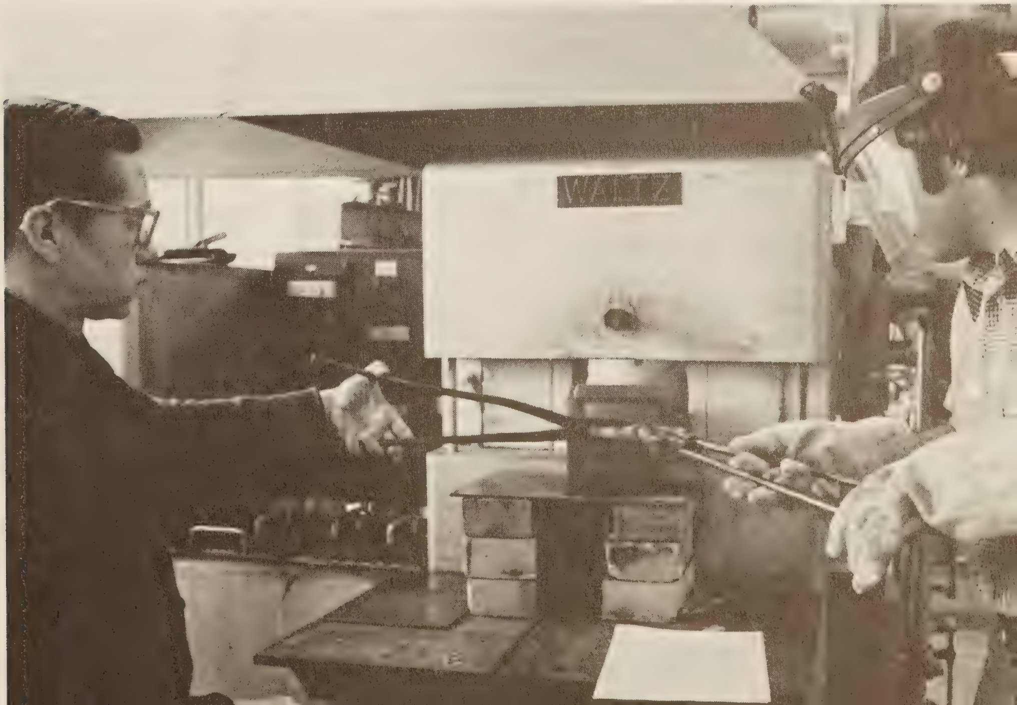
2 Class Hours, 3 Laboratory Hours
Prerequisite: MET 241 Fluid Mechanics and Thermodynamics

MET 245 Energy Conservation 2 Credits

Emphasis on developing an understanding of energy, its uses and the problems involved with its exploration, conversion and transmission. The influence of energy on man and his environment. A class tour to industries which have energy control devices and energy management programs.

1 Class Hour, 2 Laboratory Hours

Instructor assisting a Mechanical Technology student in removing a Jominy bar hardenability sample from a high temperature furnace to determine the depth of hardening for an alloy steel. In the Industrial Processes Laboratory.



MET 246 Refrigeration and Air Conditioning 3 Credits

Energy transfer systems and controls used for cooling an environment below the temperature of its surroundings. Air and humidity calculations, heat transfer and transmission coefficients, heating loads, distribution systems, refrigeration systems, cooling load and air conditioning calculations, controls and control systems. **3 Class Hours**

Prerequisite: MET 241 Fluid Mechanics and Thermodynamics

MET 247 Air Conditioning and Refrigeration 3 Credits

Energy transfer systems and controls used for cooling an environment below the temperature of its surroundings. Air and humidity calculations, heat transfer and transmission coefficients, heating loads. Thermodynamic and fluid flow concepts essential for satisfactory treatment of the above areas of study. **3 Class Hours**

Prerequisite: PHY 141 Physics

MET 248 Fluid Power 3 Credits

Static and dynamic fluid force systems used for both actuation and control of mechanical devices. Applications of frequently used fluid power components and circuits. **3 Class Hours**

Prerequisite: MET 241 Fluid Mechanics and Thermodynamics

MET 249 Fluid Power 3 Credits

Fluid statics and fluid dynamics preceding a treatment of static and dynamic force systems used for both actuation and control of mechanical devices. Applications of frequently used fluid power components and circuits.

3 Class Hours

Prerequisite: MET 132 Applied Mechanics

MET 252 Engineering Materials and Industrial Processes 4 Credits

Properties, applications and processing of engineering materials including metallic, non-metallic and composites. **3 Class Hours, 3 Laboratory Hours**

Prerequisites: MET 121 Manufacturing Processes I
and MET 235 Strength of Materials

MET 253 Engineering Materials and Industrial Processes 3 Credits

Properties, applications and processing of engineering materials including metallic, non-metallic and composite materials.

2 Class Hours, 2 Laboratory Hours

Prerequisites: MET 121 Manufacturing Processes I
and MET 235 Strength of Materials

MET 255 Introduction to Plastics Engineering 3 Credits

Basic concepts of chemical structure and the physical properties of thermoplastic and thermoset materials including additives in plastics, heat transfer and flow behavior of plastic melt, testing and property measurement, processing techniques with emphasis on extrusion and injection molding, defect analysis and troubleshooting, process control and instrumentation, material selection and application, commercial plastics, trade names, suppliers and prices. **3 Class Hours**

MET 261 Engineering Statistics and Quality Control — 3 Credits

Measures of central tendency, variance, standard deviation, binomial distribution, normal distribution, statistical inference, hypothesis testing, confidence intervals, chi-square and students t-distribution, correlation and regression, similar elements of statistics as they pertain to engineering problems. Control chart analysis. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: MAT 141 College Algebra & Trigonometry or MAT 139 Algebra

MET 272 Automotive Systems — 3 Credits

Functional elements of the automobile. The fuel system, ignition system, the engine cycle, pollution control systems, the chassis and basic elements of engine tuneup. **2 Class Hours, 2 Laboratory Hours**

MET 280 Management Decisions — 2 Credits

Objective criteria and evaluations in making management decisions. Currently accepted procedures to conceive management models and systems.

2 Class Hours

MET 285 Time, Motion and Wage Study — 2 Credits

Analysis of time spent and methods used for industrial tasks. Relation to wage structure on individual and plant-wide basis. **2 Class Hours**

Prerequisite: MAT 139 Algebra

MET 286 Production Control — 2 Credits

Planning, scheduling and routing of goods through a plant from raw materials to finished products. Production control principles, the control of manufacturing processes. **2 Class Hours**

Prerequisite: MAT 139 Algebra

MET 287 Plant Layout and Materials Handling — 2 Credits

Plant arrangement as it influences industrial operations. Assembling data, coordinating operations, developing operational layouts, evaluative arrangements. Materials handling requirements, planning and evaluation.

2 Class Hours

Prerequisite: MAT 139 Algebra

MET 295 Seminar — 1-3 Credits

An opportunity for the interested student to become involved with the process of research, formal paper preparation, formal delivery and defense of ideas presented. Also a critical evaluation of ideas set forth by others.

Prerequisite: As established by the Department Chairman

MET 299 Independent Study — 2-3 Credits

The student undertakes an independent project in his specialty under the guidance of a faculty member. Only one independent study course allowed per semester. Consideration may be given a project involving a work assignment.

Prerequisite: Approval of Department Chairman and Divisional Dean

Fire Protection Technology

The fire fighter is confronted today with infinitely more complex problems and significantly greater hazards than ever before in history. As a result, the fire service personnel must obtain the knowledge and skills necessary to meet the challenges of the job.

The Fire Protection Technology Program is designed to provide fire fighters and related fire service personnel with specialized training. The curriculum has been developed by a local advisory committee to meet the needs of the area. Specialized courses as well as general education courses will constitute the degree program. Specialized courses will include Fire Fighter Tactics and Strategy, Arson Investigation, Hydraulics, Hazardous Materials, Legal Aspects of Fire Protection, Fire Prevention, and Building Construction.

The Fire Protection Program is a part-time program open to both paid and volunteer fire fighters of the community as well as those persons in related firematic areas.

Graduates will be awarded the Degree of Associate in Applied Science.

FRS 101 Fire Prevention and Protection 3 Credits

Methods, policies and procedures relative to establishing and operating appropriate fire prevention and protection programs. **3 Class Hours**

FRS 103 Fire Fighting Tactics and Strategy 3 Credits

Focus on pre-planning and the development of fire fighting tactics appropriate for a wide variety of hazards. Review of basic information and some local conditions. The case study method is used to develop plans and tactics relating to the students own departments. **3 Class Hours**

FRS 105 Arson Investigation 3 Credits

Fire investigations and arson. Responsibilities of the arson investigator, tools of the investigator, photography, electronic devices, laws pertaining to arson, motives and tools of the arsonist, courtroom procedures. A field experience will be included. **3 Class Hours**

FRS 107 Legal Aspects of Fire Protection 3 Credits

Laws and regulations as they pertain to the fire service and its personnel. Legal terminology necessary for the interpretation of pertinent laws and decisions. Legal status of the fireman, his rights, duties, liabilities. Responsibilities and powers of the fire service in enforcement of ordinances and codes. **3 Class Hours**

FRS 108 Building Construction For Fire Science 3 Credits

Fire fighters are confronted with many unknown factors at the fire ground. Among these is the unknown structural stability of the buildings they must enter. Basic principles of building construction and design with emphasis focused on fire protection concerns. Building materials included. **3 Class Hours**

FRS 200 Hazardous Materials 3 Credits

Chemicals and chemical processes most closely involved in fire prevention and fire fighting. Use, storage, transportation and disposal of hazardous materials with emphasis on flammable liquids, flammable solids, oxidizing materials, corrosive liquids, compressed gases. **3 Class Hours**

Prerequisite: Chemistry

FRS 201 Fire Service Hydraulics 3 Credits

Application of the laws of mathematics and physics to properties of fluid states, force pressure and flow velocities. Emphasis in applying principles of hydraulics to fire-fighting problems. **3 Class Hours**

Prerequisite: MAT 102 Career Mathematics with Technical Option or equivalent

INTER-RELATED COURSES

Courses described in this section cover a broad spectrum of collegiate activities which enhance the courses offered by the other academic departments on campus. A variety of curriculums and students draws support from these offerings. The Vice-President for Academic Affairs has the over-all responsibility for these courses. Faculty members are assigned by the appropriate academic office. Future offerings might well include inter-disciplinary courses.

Computer Center Courses

The CST courses are designed to acquaint students with the computer and its capabilities and to provide opportunities for "hands-on" experience.

Because many college programs and industries depend on the computer to process data rapidly, both transfer-minded students and those preparing for immediate employment after graduation are introduced to the capabilities of the computer.

The College has a large computer system capable of supporting both the College's administrative and academic computing concurrently. The batch computing facilities and 30 time-sharing terminals are available to support the academic pursuits of all students.

CST 110 Introduction to Data Processing 3 Credits

Historical development and current influences exerted on our society by the computer. Basic computer concepts including data entry, hardware and software components that comprise a computer system. Introduction to a computer programming language, with emphasis on logical problem definition and documentation using a time sharing system. **3 Class Hours**

CST 112 Computer Logic 3 Credits

Comprehensive coverage of computer arithmetic and fundamentals of formal logic. Various number systems used in computer work and techniques for simplifying logic problems. Working basis for understanding and using the computer logically. **3 Class Hours**

Prerequisite: CST 110 Introduction to Data Processing or Instructor's permission

CST 116 RPG 3 Credits

Fundamentals of RPG (Report Program Generator) programming language. Beginning language for small business installations, especially those converting manual or unit record systems to computer. Explanation of specification sheets, internal logic, branching and table look-up operations.

2 Class Hours, 2 Laboratory Hours

Prerequisite: CST 110 Introduction to Data Processing

CST 118 Computer Programming—COBOL 3 Credits

Fundamentals of ANSI COBOL applied to solutions of commercially oriented problems. A number of problems assigned for execution on the computer. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: CST 110 Introduction to Data Processing

CST 120 Computer Programming—FORTRAN (Business) 3 Credits

Programming solutions to business problems utilizing the FORTRAN IV language. Emphasis on documentation procedures, techniques of program checking and error analysis, simulation of business data processing in a laboratory environment. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: CST 110 Introduction to Data Processing

CST 122 Computer Programming—FORTRAN (Technology) 3 Credits

Introduction to problem solving techniques using FORTRAN including development of an algorithm, flow charting, program writing, debugging, storage and execution, input and output, loop techniques, array manipulation, file control and control of on-line equipment, terminal operations. Applications taken from student's area of study. **2 Class Hours, 2 Laboratory Hours**

Students taking advantage of the College's policy of giving them access to the Computer Center from 8 a.m. to 10 p.m. They are shown here using some of the 30 academic time-sharing terminals which are hooked into the College's computer.

CST 124 Computer Programming for Engineers 3 Credits

FORTRAN IV programming, block diagramming, numbering and coding systems. Use of graphic plotter, derivation and application of empirical equation analysis, application of matrix algebra, application of simulated time and iteration procedures. **2 Class Hours, 3 Laboratory Hours**

CST 126 Assembly Programming—BAL 3 Credits

Fundamentals of assembly level programming using BAL. Emphasis on the use of assembly language in solving a number of programming problems.

2 Class Hours, 2 Laboratory Hours
Prerequisite: CST 110 Introduction to Data Processing

CST 130 PL/1 3 Credits

Introduction to PL/1, a general purpose language capable of conveniently handling both scientific and busines problems. Basic program elements, nesting, looping, string techniques, arrays and structures, procedures, input/output and formatting. **2 Class Hours, 2 Laboratory Hours**
Prerequisite: CST 110 Introduction to Data Processing

CST 200 Systems Analysis 3 Credits

Principles of systems analysis, problem solving and implementation of computer systems including the importance of standards, procedures, security and documentation. Each student to complete a programming project utilizing his/her knowledge from this and other Computer Studies courses. A team case study approach and guest speeches provide the format of work sessions.

2 Class Hours, 2 Laboratory Hours
Prerequisite: Two programming languages or instructor's permission

CST 202 Data Structures 3 Credits

Basic data structure concepts, linear lists, linked lists, sets, trees and multilinked structures. Programmer-defined structures, language features and generalized data management systems. Programs using basic data structures.

2 Class Hours, 2 Laboratory Hours
Prerequisite: CST 118 Computer Programming—COBOL or CST 120 or CST 122 Computer Programming—FORTRAN and permission of instructor

CST 204 Computer Programming Techniques 3 Credits

Discussion of various programming techniques with emphasis on writing readable, structured programs. A number of programs, each of which will be reviewed by the whole class in an attempt to show the various problem-solving approaches utilized. **2 Class Hours, 2 Laboratory Hours**
Prerequisite: CST 118 Computer Programming—COBOL or CST 120 or CST 122 Computer Programming—FORTRAN and permission of instructor

CST 205 Advanced Fortran with Graphics 3 Credits

A further study of the proper way to write FORTRAN programs. Use of logical structures to define complicated systems, use of subroutines, simulation programming, file structures, queues, searching, sorting. Emphasis on use of school's plotter and graphics terminals. Class project involving graphics, statistics.

2 Class Hours, 2 Laboratory Hours
Prerequisite: CST 120 or CST 122 Computer Programming—FORTRAN or CST 124 Computer Programming for Engineers

Human Development Courses

Across the nation students have been indicating that they want the opportunity in college to identify, pursue and accomplish personal goals, to develop healthier self-concepts, to develop more effective levels of self-understanding and to become open human beings who can build trusting relationships with others. The student affairs courses can be one means of facilitating humanistic objectives espoused by "new" college students.

SAC 101 The Individual in a Changing Environment 3 Credits

Individual interaction and reading designed to foster understanding and application of psychological and emotional growth. Basic class material is the individual and group analysis of student's experience within an immediate unstructured setting. Focus on analysis and organization of experience into a personally rewarding conception of growth. Individual self-development projects outside the class. **3 Class Hours**

SAC 295, 296 Seminar in Human Potential 3, 2 Credits

Human Potential focuses on the person's own resources, strengths, motivators, values and successful and satisfying experiences. Human potential sessions are positive group experiences working on and with the potential and strengths of the feeling concerning one's self and others by utilizing specific procedures. **3, 2 Class Hours**

Respiratory Courses

RES 101 Respiratory Therapy 3 Credits

Introduction to respiratory therapy. Oxygen and medical gas therapy, humidification and aerosol therapy, emergency airway management including cardiopulmonary resuscitation. **3 Class Hours**

RES 120 Intensive Care Unit 3 Credits

Recognition, medical management and prevention of acute respiratory diseases. Clinical experience to facilitate the correlation of theory with application. Opportunity for each student to render care to both acute and chronic pulmonary patients. **3 Class Hours**

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STATE UNIVERSITY OF NEW YORK

ERNEST L. BOYER—Chancellor

Broome Community College is one of the 64 colleges that comprise the State University of New York (SUNY), which was established by the State Legislature in 1948. The 64 units include 30 locally-sponsored two-year community colleges like Broome.

SUNY is the largest centrally managed, multi-level system of public higher education in the nation.

The University's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New York citizens. In academic 1975-76, nearly 355,000 students enrolled in its classrooms or pursued study at home, at their own pace, through such innovative institutions as Empire State College, a campus without walls.

The University is uniquely organized into a system comprised of:

Four university centers, two medical centers, 13 colleges of arts and science, a non-residential college, three specialized colleges, six agricultural and technical colleges, five statutory colleges, and 30 locally-sponsored community colleges.

In addition to baccalaureate studies, 12 of the senior campuses offer graduate study at the doctoral level, and 22 at the master's level.

The two-year colleges offer associate degree opportunities in a wide range of technical areas. They also provide transfer programs within the University for students wishing to continue to the baccalaureate degree. In the 1975-76 college year, the community colleges enrolled 156,000 students, of which 83,000 were full-time and 73,000 part-time. Ten Educational Opportunity Centers serve the educationally deprived by upgrading occupational skills for more gainful employment and identifying students with college potential to prepare them for enrollment in the state's public and private colleges.

State University is governed by a Board of Trustees, appointed by the Governor, which determines the policies to be followed by the 34 State-supported campuses. The 30 community colleges operating under the program of State University have their own local boards of trustees.

The State University motto is "Let Each Become All He Is Capable of Being."

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- State University at Albany
- State University at Binghamton
- State University at Buffalo
- State University at Stony Brook

MEDICAL CENTERS
- Downstate Medical Center at Brooklyn
- Upstate Medical Center at Syracuse

COLLEGES OF ARTS AND SCIENCES
- College at Brockport
- College at Buffalo
- College at Cortland
- College at Fredonia
- College at Geneseo
- College at New Paltz
- College at Old Westbury
- College at Oneonta
- College at Oswego
- College at Plattsburgh
- College at Potsdam
- College at Purchase
- College at Utica/Rome (Upper Division College)

SPECIALIZED COLLEGES
- College of Environmental Science and Forestry at Syracuse University
- Maritime College at Fort Schuyler (Bronx)
- College of Optometry at New York City

NON-RESIDENTIAL COLLEGE
- Empire State College at Saratoga Springs

AGRICULTURAL AND TECHNICAL COLLEGES (Two-Year)
- Alfred
- Canton
- Cobleskill
- Delhi
- Farmingdale
- Morrisville

STATUTORY COLLEGES
- College of Ceramics at Alfred University
- College of Agriculture and Life Sciences at Cornell University
- College of Human Ecology at Cornell University
- School of Industrial and Labor Relations at Cornell University
- Veterinary College at Cornell University

COMMUNITY COLLEGES

(Locally-sponsored, two-year colleges under the program of State University)

- Adirondack Community College at Glens Falls
- Broome Community College at Binghamton
- Cayuga County Community College at Auburn
- Clinton Community College at Plattsburgh
- Columbia-Greene Community College at Athens
- Community College of the Finger Lakes at Canandaigua
- Corning Community College at Corning
- Dutchess Community College at Poughkeepsie
- Erie Community College at Buffalo
- Fashion Institute of Technology in NYC
- Fulton-Montgomery Community College at Johnstown
- Genesee Community College at Batavia
- Herkimer County Community College at Ilion
- Hudson Valley Community College at Troy
- Jamestown Community College at Jamestown
- Jefferson Community College at Watertown
- Mohawk Valley Community College at Utica
- Monroe Community College at Rochester
- Nassau Community College at Garden City
- Niagara County Community College at Sanborn
- North Country Community College at Saranac Lake
- Onondaga Community College at Syracuse
- Orange County Community College at Middletown
- Rockland Community College at Suffern
- Schenectady County Community College at Schenectady
- Suffolk County Community College at Selden
- Sullivan County Community College at Loch Sheldrake
- Tompkins-Cortland Community College at Dryden
- Ulster County Community College at Stone Ridge
- Westchester Community College at Valhalla

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X-ray Technology (see Radiologic Technology)

COLLEGE CALENDAR 1976-77

FALL SEMESTER 1976

August 30-September 3	Orientation and registration
September 6	Labor Day
September 7	Classes begin
October 29	Mid-term grades due
November 25-26	Thanksgiving recess
November 29	Classes resume
December 20	Last day of classes
December 21-22-23	Evaluation
December 28	Grades due

SPRING SEMESTER 1977

January 26-27-28	Orientation and registration
January 31	Classes begin
March 24	Mid-term grades due
April 11-15	Spring vacation
April 18	Classes resume
May 21	Classes end
May 23-24-25	Evaluation
May 27	Grades due
June 3	Graduation

Map of the Campus

1. TITCHENER HALL
Engineering Science and Physics
Liberal Arts
Mathematics
Audio-Visual Center
Nuclear Physics Laboratory

2. WALES BUILDING
Administrative Offices
Admissions Office
Counseling and Student Development Center
Office of Continuing Education
Finance Office
Health Service Office
Public Relations Office
Students Affairs Office

3. SCIENCE BUILDING
Chemical Technology
Dental Hygiene

4. ELECTRICAL BUILDING
Electrical Technology

5. STUDENT CENTER
Bookstore
Cafeteria
Gymnasium
Little Theater
Physical Education

6. MAINTENANCE BUILDING

7. THE UNION
Student Activities
Student Lounge

8. MECHANICAL BUILDING
Civil Technology
Mechanical Technology
Faculty Offices including
  Medical Laboratory
  Liberal Arts

9. CECIL C. TYRRELL LIBRARY
Student Lounge
Department Offices
  Medical Laboratory
  Medical Office Assistant
  Medical Record
  Nursing
  Radiologic Technology

10. BUSINESS BUILDING
ccounting and Business Administration
arketing Management
ecretarial Sciences
omputer Center

11. FACULTY OFFICES

2. KINDER KARE